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THE INTENSIVE TREATMENT OF SYPHILIS AND OBSERVATIONS ON SEROLOGICAL REACTIONS.

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THE treatment of syphilis has, during the last year or two, made great progress, the tendency being towards intensive treatment with arsenic. While it is recognized that the trend towards this form of treatment is still more or less in its infancy, it must be admitted that, with experience in determining the optimum dose and the method of its administration, the intensive treatment has distinct possibilities of at least halving or even quartering the time formerly taken to effect a "cure". To those who are interested in the "bolder" exhibition of arsenical treatment, the following statistics of patients treated may be of interest, if not of value.

The patients mentioned are those received and treated at an Australian special hospital; the patients were sent direct, without any previous treatment, and were placed in one category or another for the purpose of determining which form of intensive treatment they should be given. To this end, patients suffering from "early" syphilis only were entertained as being suitable for intensive treatment, and were divided into the following categories:

Primary Syphilis.—(*a*) No reaction to serological tests, or early primary. (*b*) Early stages of reaction to serological tests (low titre "+" or "++"), or middle primary. (*c*) Late stages of reaction to serological tests (high titre "++++"), or late primary.

Secondary Syphilis.—Early macular rashes, mucous patches, condylomata.

Each patient underwent a thorough clinical examination to determine whether he was a suitable subject, both mentally and physically, for intensive treatment.

When the diagnosis of syphilis was made, the patient was given 0·04 gramme of "Mapharsan" as a test for any idiosyncrasies, and any further treatment was given three days later.

Five-Day Intravenous Massive Dose Arsenical Therapy.

The following apparatus is required for the five-day massive intravenous dose method of arsenical therapy: (i) a needle, gauge 20 (1·5 inch—"Luer-Lok"); (ii) diluent, 5% dextrose solution, freshly prepared; (iii) drug ("Mapharsan", Parke, Davis and Company, Limited); (iv) a glass gravity cylinder, 600 cubic centimetres capacity, with attached rubber tubing, a glass drip chamber and an adapter for the needle; (v) a Murphy clamp for the rubber tubing.

Mode of Administration.

The treatment lasted for five days. "Mapharsan" (Parke, Davis and Company, Limited) was the arsenical preparation used. The solution, consisting of 2,000 cubic centimetres (two litres) of 5% dextrose solution in double distilled water, in which was dissolved 0·24 gramme of "Mapharsan" (0·012 gramme to each 100 cubic centimetres), was run in continuously for ten hours, so that the dosage was as follows: (i) the hourly dose of "Mapharsan" was 0·024 gramme in 200 cubic centimetres of 5% dextrose solution; (ii) the daily dose was the total dose for ten hours, or 0·24 gramme of "Mapharsan"; (iii) the total dose (fifty hours or five days) was 1·2 grammes of "Mapharsan".

It was found that by using a container (glass gravity cylinder) which held approximately 600 cubic centimetres to start with (a little extra solution being allowed to make sure that the patient received the full 2,000 cubic centimetres), and by making three replenishments of 500 cubic centimetres (approximately every two and a half hours) of freshly prepared solution, many of the toxic symptoms

which otherwise would have developed (vomiting, headache, toxicodermas) were prevented.

The solution was a freshly prepared 5% dextrose solution, in which 0·012 gramme of "Mapharsan" was added to each 100 cubic centimetres of the solution. Four separate quantities were mixed, the first consisting of 600 cubic centimetres, the second, third and fourth consisting of 500 cubic centimetres each. It was necessary to make the first quantity 600 cubic centimetres, so that at the end of treatment 100 cubic centimetres should be left in the container to prevent the introduction of air into the vein, and to allow the full quantity to be given, with a margin against any wastage which might occur.

Each separate quantity was made up under aseptic conditions only five minutes or so before it was required for use, and a sterile gauze lid was replaced over the container after each replenishment. The solution was run into any suitable vein, alternate forearms being used each day, at a rate of between 60 and 70 drops per minute.

Results.

Twenty-two patients were treated by the five-day intravenous drip method, and blood tests (Wassermann and Kline tests) were made each week for ten consecutive weeks and thereafter every three months. The results, which are set out hereunder, should be of interest.

There were seven patients with primary syphilis whose blood failed to react to serological tests before treatment; the blood of five continued to fail to react to serological tests; in the blood of one a slight titre developed, but disappeared in one week; in the blood of another a slight titre developed, but disappeared in two weeks.

There were thirteen patients with primary syphilis whose blood serum yielded a reaction ("++++") before treatment; the serum of three ceased to react one week later; the serum of one ceased to react two weeks later; the serum of two ceased to react three weeks later; the serum of one ceased to react four weeks later; the serum of three ceased to react five weeks later; the serum of one ceased to react seven weeks later; and the serum of two ceased to react eight weeks later.

In Table I are shown the results of the serological tests in these thirteen cases maintained over a period of ten consecutive weeks.

The average time taken for the serum in these thirteen cases, which had given strongly positive ("++++") reactions to the Wassermann and Kline tests, to cease to react, was 3·85 weeks for the Wassermann test and 15·77 weeks for the Kline test. None of these have, as yet, relapsed. The period of observation will be at least one year.

Points of Interest.

1. The use of freshly prepared solution in three replenishments of 500 cubic centimetres, mixed about five minutes before the container was refilled, did away with toxic symptoms, such as headache, vomiting and toxicodermas.

2. It was noticed that when "Soluvac" flasks of 5% dextrose solution were used a certain amount of phlebitis developed in the vein into which the injection was being given. This was due to the growth of a Penicillium in the solution. To obviate this, a 50% solution of dextrose was kept (which was strong enough to prevent the growth of moulds) and diluted down to 5% when necessary. No further non-suppurative endophlebitis was encountered as a result of the use of this solution.

3. Although the patient was taking 2,000 cubic centimetres of fluid per day, the average urine output for the twenty-four hours was eighteen ounces. Fluids, of course, were restricted and a light diet was given during the treatment; a mild purgative was given the night before.

4. Patients were allowed out of bed for two hours during each evening, and were kept in bed for two whole days after treatment had ceased.

5. Two patients suffering from clinical secondary syphilis were treated by the five-day intravenous method; one had a macular rash and mucous patches, and the other a small papular rash on the body. To commence, the serum of both gave a strongly positive ("++++") reaction to the Wassermann and Kline tests. All clinical signs disappeared, but serologically no difference in titre followed treatment, even after ten weeks, and so these two cases were considered failures.

TABLE I.

Case Number.	Test.	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
IX	W.R.[1]	−	−	−	−	−	−	−	−	−	−
	K.R.[1]	−	−	−	−	−	−	−	−	−	−
XX	W.R.	−	−	−	+	+	−	−	−	−	−
	K.R.	++++	−	+	+	−	−	−	−	−	−
XVIII	W.R.	−	−	−	−	−	−	−	−	+	−
	K.R.	+	+	++	++	++	−	−	+	−	++
XXVI	W.R.	+	−	−	−	−	−	−	−	−	−
	K.R.	+++	++	++	+	+	−	−	−	−	−
XXV	W.R.	+	++	−	−	−	−	−	−	−	−
	K.R.	++	++	+	+	−	−	−	−	−	−
XIII	W.R.	++++	++++	−	−	−	−	−	−	−	−
	K.R.	++++	++++	++++	+++	++	−	−	−	−	−
XI	W.R.	++++	++++	++	−	−	−	−	−	−	−
	K.R.	++++	++++	+++	−	−	−	−	−	−	−
XXI	W.R.	++++	++++	+++	+	−	−	−	−	−	−
	K.R.	++++	++++	++++	+++	+++	+++	++	++	+	+
XXIV	W.R.	++++	++++	++++	++	−	++	−	−	−	−
	K.R.	++++	++++	++++	++++	++++	++	+	++	++	+
XXII	W.R.	++++	++++	+	+	−	−	+	−	−	−
	K.R.	++++	+++	+++	+	−	+	+	−	+	−
XVII	W.R.	++++	++++	−	++	++	+	−	−	−	−
	K.R.	+++	+++	+	+++	++++	++++	+++	+++	+++	++++
XXIII	W.R.	++++	++++	++++	++	−	−	++	−	−	−
	K.R.	++++	++++	++++	+++	+++	++	++	++	++	−
XVI	W.R.	++++	++++	+++	++++	++++	++++	+++	−	++	−
	K.R.	++++	+++	++++	++++	+++	++++	++++	++++	++++	++

[1] "W.R." = Wassermann reaction; "K.R." = Kline reaction.

6. Some forty patients in all had been treated at this hospital by the intravenous drip method with no apparent complications, when one patient died from *encephalitis hæmorrhagica* (arsenical). Symptoms did not commence, and the patient seemed well, until some thirty hours after treatment ceased, when he got out of bed to move his mattress and suddenly appeared to have a hæmorrhage into the internal capsule, with resultant paraplegia. This diagnosis was proved to be correct at the post-mortem examination forty-eight hours later, when petechial hæmorrhages, as well as a large hæmorrhage into the internal capsule in the brain substance, were found.

Results of Serological Tests.

The data for the first series of cases are insufficient, therefore we have not included them in the statistics.

Below are five typical graphs of serological reactions illustrating serum reactions of patients in each of the three subgroups of primary syphilis to five-day intravenous massive dose arsenical therapy. Blood tests were made at intervals of one week (represented horizontally) after cessation of treatment, the titre of the serum being plotted vertically. Results of the Wassermann test are shown by unbroken lines, and of the Kline test by dotted lines.

Weekly titration of patients' serum according to our method showed that these cases of primary syphilis may be classed according to the following three types of graph: (i) Early Primary: the serum fails to react, or remains at a very low reagin level throughout (Figures I and II). (ii) Middle Primary: the serum has a very low reagin value, which rises sharply, and drops suddenly again to

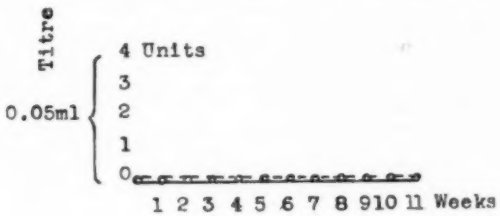

FIGURE I.
Early primary syphilis.

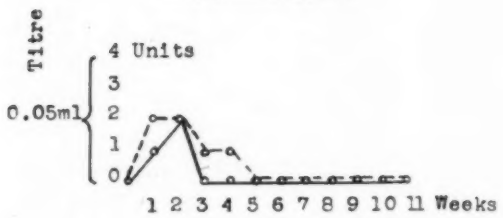

FIGURE II.
Early primary syphilis.

remain at a constantly low level thereafter (Figure III). (iii) Late Primary: *A*, the serum has an initial high reagin level, which drops rapidly and remains at a constantly low level thereafter (Figure IV); *B*, the serum has an initial high reagin level, which drops suddenly and rises again before falling to a constantly low level (Figure V).

Untoward Reactions.

Nausea and vomiting occurred in four cases only, and were later obviated by controlling the drip; a slower rate of drip caused less feeling of nausea, if this condition happened to come on. The use of a fresh solution, and replenishment of the containers, caused a disappearance of these symptoms.

Mild headache occurred in twelve of the twenty-two cases.

Primary fever—that occurring on the first day of treatment, usually about eight hours after the commencement—developed in six cases. In two the temperature rose to 99° F. or over, in three it rose to 100° F. or over, and in one it rose to 101° F.

Secondary fever—that usually occurring on the last day of treatment—is a danger signal if disregarded and not closely watched. Secondary fever developed in nine cases. In two the temperature rose to 99° F. or over, in three it rose to 100° F. or over, in one it rose to 101° F. or over and in three it rose to 102° F. or over.

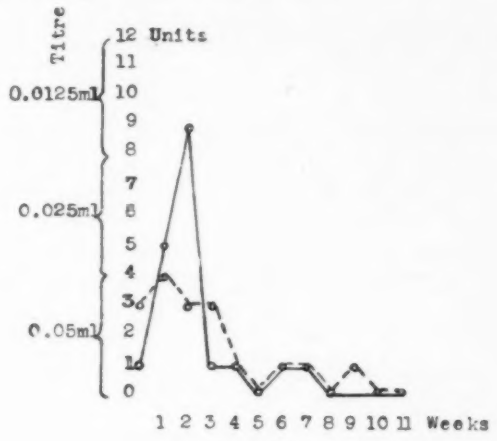

FIGURE III.
Middle primary syphilis.

General toxicoderma developed in three cases. It took the form of a plain generalized erythema, the rash disappearing overnight and not occurring again. This rash develops usually at the same time as the primary rise in temperature—at the close of the first day's treatment.

No renal reactions occurred; the urine remained clear throughout, and was tested night and morning.

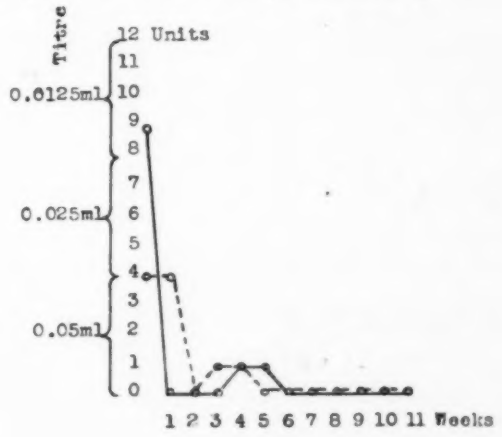

FIGURE IV.
Late primary syphilis.

No peripheral neuritis, jaundice, nitritoid reactions, or blood dyscrasias were noted.

In blood counts carried out for experimental purposes, no difference in cell count was noticed; but in one or two cases a slight crenation of red cells was present.

No dermatitis occurred.

Endophlebitis of the injected vein occurred in three early cases. This was found to be due to the growth of a mould (Penicillium) in the "Soluvac" solution being used. The preparation of a fresh 5% solution of dextrose and replenishment of the graduated cylinder (600 cubic centi-

metres) was followed by no further trouble from this non-suppurative endophlebitis.

Encephalitis hæmorrhagica occurred in one case and proved fatal.

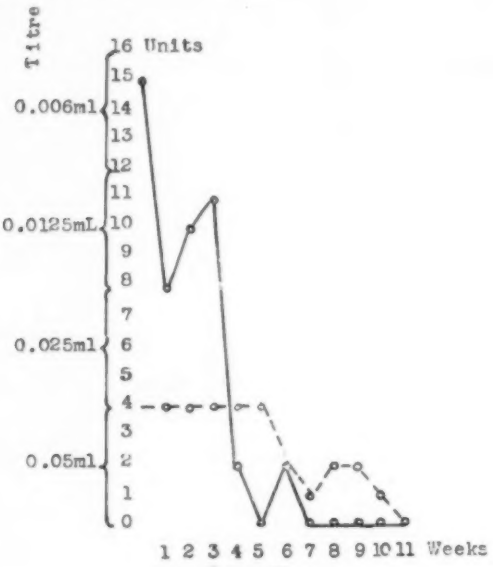

FIGURE V.
Late primary syphilis.

Five-Day Multiple Injection Course.

One patient suffering from primary syphilis, whose serum yielded a "++++" reaction, was given a multiple injection course, consisting of four injections of 0·04 gramme of "Mapharsan" in ten cubic centimetres of double-distilled water, at intervals of four hours, commencing at 8 a.m. and finishing at 8 p.m. each day, over five days. The amounts given were 0·16 gramme per day, and 0·8 gramme over the period of five days. This patient's blood ceased to react to tests for syphilis in the fifth week, and has failed to react for the past eleven months. No complications occurred. (Figure VI.)

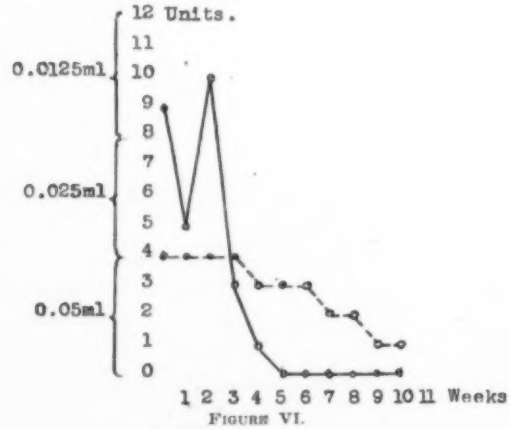

FIGURE VI.

Twelve Weeks' Injection Course.[1]

The twelve weeks' injection course consists of the administration of three "Mapharsan" injections per week (Tuesdays, Thursdays and Saturdays), together with one injection of 0·2 gramme of a bismuth preparation once a week intramuscularly (Saturday) for twelve weeks. The dosage in this case is carried out on the following scale: patients weighing less than 120 pounds are given 0·05 gramme per injection; those weighing from 120 to 155 pounds are given 0·06 gramme; and those weighing over 155 pounds are given 0·07 gramme. Three patients were treated in this manner without untoward symptoms. One patient's serum failed to react to tests for syphilis when treatment commenced, and serological tests have since then produced no reaction. Two patients commenced with strong positive Wassermann and Kline reactions ("++++"), and negative results were obtained after four and eight weeks respectively; the serum still fails to react to these tests. Below is a graph of the serological condition in a case in which the first reaction was "++++"; the patient was given a twelve weeks' course.

Twenty-Six Weeks' Course.

Some patients suffering from primary syphilis, with positive serum reactions, and all patients suffering from secondary syphilis, both early and late, and from latent syphilis, were given the twenty-six weeks' course. This course was as follows: (i) two injections of "Mapharsan" and one of bismuth per week for the first five weeks (one to five weeks); (ii) two injections of "Mapharsan" per week for the next five weeks (six to ten weeks); (iii) one injection of bismuth per week for the next six weeks (eleven to sixteen weeks); (iv) two injections of "Mapharsan" per week for five weeks; (seventeen to twenty-one weeks); (v) two injections of "Mapharsan" and one of bismuth per week for five weeks (twenty-two to twenty-six weeks).

The following review of the serological reactions to this course of treatment in forty-five cases is interesting:

(i) Serum failed to react to tests for syphilis and continued so	10 cases
(ii) Serum gave a "++++" reaction to the Wassermann test and later ceased to react:	
In one week	1 case
In two weeks	1 case
In five weeks	2 cases
In seven weeks	2 cases
In eight weeks	1 case
In nine weeks	1 case
In ten weeks	7 cases
In eleven weeks	1 case
In twelve weeks	2 cases
In sixteen weeks	9 cases
In twenty-seven weeks	1 case
In thirty-one weeks	1 case
In over thirty-one weeks	1 case
(iii) Serum gave a "++++" reaction to the Wassermann test and continued to do so	5 cases
Total	45 cases

The average time for the thirty cases in Group (ii) was 12·45 weeks.

Owing to pressure of pathological work, blood tests were made in all forty-five cases at the commencement of treatment, after ten weeks, and then at the finish of treatment (twenty-six weeks). As pressure of work became less, blood tests were made at the commencement of treatment and thence every week during treatment to try to form an idea of the average time taken for the blood to cease to react to tests for syphilis. In the cases in which weekly tests were carried out, the blood ceased to react to the Wassermann test in approximately forty-two days, so that the possibility is that, if weekly tests had been made in all forty-five cases, the average would be well below 12·45 weeks.

Comment.

It is of interest to note that of the five patients who proved resistant to the twenty-six weeks' course, two had already been "failures" from the five-day intravenous drip

[1] It should be particularly noted that by Director-General of Medical Services Technical Instruction Number 80, of November, 1943, intensive arsenotherapy will not be used in the treatment of personnel of the Australian Military Forces.

course of treatment; one was a heavy drinker. Of the other three, all were heavy drinkers and gave their bodies little or no chance of resisting any infection.

We have been fortunate in being able to observe patients both clinically and serologically and to work in cooperation in this respect. Many patients were referred to us as suffering from syphilis, when actually the Wassermann and the Kline tests produced false postive reactions.

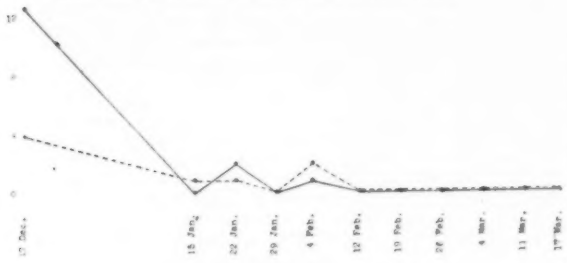

FIGURE VII.

Technique of Serological Investigations.

A reliable method for performing the Wassermann test recommended by the Medical Research Council (Special Report Series, Number 14, Method Number 4) was employed; it is used throughout the Commonwealth Health Laboratories, and is one with which the serologist has been familiar for a number of years. This warm-bath fixation method has proved more specific in our hands than the Kolmer and other ice-box fixation methods.

The quantities of serum and antigen used in the test are kept constant throughout, and two quantities (three minimum hæmolytic doses and five minimum hæmolytic doses) of complement are used. The following notation of results was decided upon for the purpose of clinical and serological collaboration: (i) complete inhibition in three minimum hæmolytic dose and five minimum hæmolytic dose tubes, "++++" (full positive); (ii) complete inhibition in three minimum hæmolytic dose tube and some hæmolysis in five minimum hæmolytic dose tube, "+++" (strong positive, incomplete); (iii) complete inhibition in three minimum hæmolytic dose tube, but complete hæmolysis in five minimum hæmolytic dose tube, "++" (weak positive); (iv) slight hæmolysis in three minimum hæmolytic dose tube and complete hæmolysis in five minimum hæmolytic dose tube, "+" (doubtful); (v) complete hæmolysis in both tubes, "–" (no reaction). These readings are found to correlate closely with the Kline notation.

The dilution of serum for this method is one in five with normal saline solution. When serum in this dilution gives a full positive reaction to the Wassermann test then the

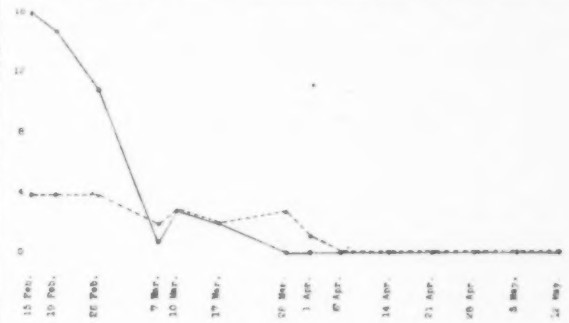

FIGURE VIII.

serum is further diluted one in ten, one in twenty and one in forty and retested for the purpose of indicating more closely the strength of the reaction (see Medical Research Council Special Report Series, Number 14) and the results are again recorded according to the above notation. By this means an estimate of the serum titre can be made. If each "++++" (full positive) reaction is taken to be equivalent to four arbitrary units of syphilitic reagin, then we can express numerically the amount of antibody present. Thus a reagin value of nine units would be allocated to

TABLE II.

"False-Positive" Reactions to the Wassermann Test.

(Mean serum titre, 8.)

Case.	Diagnosis.	Result of Kline Tests.	Result of Wassermann Tests.				Titre.	Gonococcal Complement Fixation Test.	History.
			One in Five.	One in Ten.	One in Twenty.	One in Forty.			
I	Non-specific urethritis, balanitis, pediculi.	++	++++	+	–	–	5	–	Gonorrhœa (February, 1943).
II	No abnormality detected.	+	++++	+	–	–	5	..	Gonorrhœa (October, 1942).
III	Gonorrhœa.	–	++++	+	–	–	5	++++	Gonorrhœa (March, 1943).
IV	Non-specific urethritis.	–	++++	+	+	–	6	++	Non-specific urethritis (February, 1941).
V	Possible syphilis.	++	++++	+++	++	+	10	++	Nil.
VI	Gonorrhœa.	+	++++	++	–	–	6	–	Non-specific urethritis (April, 1942).
		–	++++	++	–	–	6	..	Malaria (last attack, December, 1942).
		+	++++	++++	++	–	10	..	
		–	++++	++	–	–	6	–	
VII	Balanitis.	–	++++	++	+	–	7	..	Nil.
VIII	No appreciable lesion.	+	++++	++++	++	–	10	..	Similar pimples on penis, 1942 and 1943, in Middle East.
IX	Non-specific urethritis.	+	++++	+++	++	–	9	..	Non-specific urethritis (April, 1943).
X	Non-specific urethritis.	–	++++	+	–	–	5	–	Gonorrhœa.
XI	Non-specific urethritis.	–	++++	++	+	–	7	..	Gonorrhœa 18 years earlier.
		–	++++	++	+	–	7	–	
XII	Gonorrhœa.	+	++++	+++	++	–	9	++++	Non-specific urethritis, 1936.
		–	++++	++++	+++	+	12	++++	Gonorrhœa, 1936. Malaria, 1936.
XIII	Non-specific urethritis.	–	++++	++	+	–	7	..	Gonorrhœa, 1941.
XIV	Chronic prostatitis.	–	++++	++	+	–	7	..	Non-specific urethritis, 1943.
XV	Prostatis; non-specific urethritis.	–	++++	+++	++	–	9	++++	Gonorrhœa twenty years ago; malaria.
XVI	Chronic prostatitis.	–	++++	–	–	–	4	–	Malaria, 1942.
XVII	Non-specific urethritis.	–	++++	+++	++	–	9	..	Nil.
XVIII	Non-specific urethritis.	–	++++	+++	++	+	10	..	Gonorrhœa, 1942.
XIX	Non-specific urethritis.	–	++++	++	++	+	9	..	Gonorrhœa, 1944.
XX	Non-specific urethritis.	+	++++	+++	++	+	10	..	Nil.
XXI	Non-specific urethritis.	–	++++	++	+	–	7	–	Nil.
XXII	Non-specific urethritis.	–	++++	++++	+++	+	12	–	Gonorrhœa, 1929 and 1934.
XXIII	Phimosis.	–	++++	+++	++	–	9	–	Inflamed prepuce twelve months earlier (1943).

serum giving the following responses to the Wassermann test:

	Units.
"++++" in 1/5 dilution (0·05 millilitre of serum)	4
"+++" in 1/10 dilution (0·025 millilitre of serum)	3
"++" in 1/20 dilution (0·0125 millilitre of serum)	2
"–" in 1/40 dilution (0·006 millilitre of serum) ..	0
Total	9

It has been our experience that all serum from patients clinically syphilitic (including those under treatment) which yield a "++++" (full positive) reaction to the Wassermann test in the usual one in five dilution, also give a "++++" reaction to the Kline test. Serum from patients not clinically syphilitic which yield a "++++" (full positive) reaction to the Wassermann test in the one in five dilution and a weak reaction or no reaction ("++", "+", or "–") to the Kline test, is what we have designated as giving "false-positive" reactions to the Wassermann test. When this type of serum is diluted one in ten, one in twenty, and one in forty and retested, the complement deviating power is found to drop rapidly, so that very few specimens are found to give a "++++" reaction to the Wassermann test in the one in ten dilution, and none to give a "++++" reaction to the Wassermann test in the one in twenty and one in forty dilutions. This is in contrast to true syphilitic serum, of which the majority of specimens give a "++++" reaction to the Wassermann test in the one in ten dilution and quite often in the one in twenty and one in forty dilutions also.

Herein lies a means of differentiating between serum giving these "false-positive" results and true syphilitic serum. This can be seen best by referring to Tables II, III and IV, prepared from the results of blood tests of patients submitted to routine Wassermann tests on their admission to hospital. Table II lists twenty-three "false-positive" responses from 3,060 specimens of serum (0·75%) submitted for routine Wassermann testing. Of the twenty-three patients, the blood of all but three (Cases VI, XI and XII) has failed to react to the Wassermann test on subsequent occasions, and of these three, two (Cases VI and XII) have had frequent malarial attacks. A perusal of the table shows how the complement-deviating power of these "false-positive" reactions rapidly diminishes on serum dilution in contrast with true syphilitic serum as shown in Tables III and IV. Table III lists twenty cases of primary syphilis with positive serological findings all confirmed by dark ground illumination examination. Table IV lists twenty cases of secondary and tertiary syphilis, all confirmed from clinical manifestation. For Table II the mean reagin value is approximately 8·0 units; for Table III the mean reagin value is approximately 13·5 units; for Table IV the mean reagin value is approximately 15·0 units.

To summarize: if serum is to be classified as giving a "false-positive" reaction to the Wassermann test, the following criteria are required: (i) whilst a "++++" (full positive) reaction to the Wassermann test is given, the Kline reaction is weak ("++", "+", or "–"); (ii) the reagin titre of the serum is low (generally under ten arbitrary reagin units), the complement deviating power of the serum rapidly diminishing on dilution; (iii) without anti-syphilitic treatment, the serum fails to react to the Wassermann test on subsequent occasions.

TABLE III.

Primary Syphilis (Positive Serological Findings).

(Mean serum titre, 13·5.)

Case Number.	Diagnosis.	Results of Kline Tests.	Results of Wassermann Tests.				Titre.	Gonococcal Complement Fixation Test.	History.
			One in Five.	One in Ten.	One in Twenty.	One in Forty.			
I	Syphilis.	++++	++++	++++	+++	+	12	..	Penile sore.
II	Syphilis.	++++	++++	++++	++++	++++	16+	..	Sore for eight weeks; positive findings on dark-ground illumination of material from bubo.
III	Syphilis.	++++	++++	++++	++	–	10	..	Sore and balanitis, twenty days; dark-ground illumination examination of sore gave positive results.
IV	Syphilis (treated).	++++	++++	++++	++++	++	14	..	
V	Syphilis (treated).	++++	++++	+++	++	+	10	..	Balanitis; dark-ground illumination examination of chancre gave positive result.
VI	Syphilis (treated).	++++	++++	+++	++	++	11	..	Chancre near umbilicus.
VII	Gonorrhœa and syphilis (latent primary).	++++	++++	++++	++	–	10	++++	
VIII	Syphilis.	++++	++++	+++	++	+	10	..	Sore twelve days; dark-ground illumination examination gave positive results.
IX	Syphilis.	++++	++++	++++	++++	+++	15	..	Sore twenty-three days; dark-ground illumination examination gave positive results.
X	Syphilis.	++++	++++	++	++	+	9	..	Sore four days; dark-ground illumination examination gave positive results.
XI	Syphilis.	++++	++++	++++	++++	++	14	..	Sore two months; dark-ground illumination examination gave positive results.
XII	Syphilis.	++++	++++	++++	++++	Not done.	12+	..	Sores for four weeks; dark-ground illumination examination gave positive results.
XIII	Syphilis.	++++	++++	++++	++	–	10	..	Chancre for two months and balanitis; dark-ground illumination examination gave positive results.
XIV	Syphilis.	++++	++++	++++	++++	++++	16+	..	Chancre for four weeks; dark-ground illumination examination gave positive results.
XV	Syphilis.	++++	++++	++++	++++	++++	16+	..	Lip chancre for one month; dark-ground illumination examination gave positive results.
XVI	Syphilis.	++++	++++	++++	++++	++++	16+	..	Rash beginning.
XVII	Syphilis.	++++	++++	++++	++++	++++	16+	..	Sore four days; dark-ground illumination examination gave positive results.
XVIII	Syphilis.	++++	++++	++++	++++	++++	16+	..	Penile chancre; dark-ground illumination examination gave positive results.
XIX	Syphilis.	++++	++++	++++	+++	++	13	..	Penile chancre; dark-ground illumination examination gave positive results.
XX	Syphilis.	++++	++++	++++	++++	++++	16+	..	Penile chancres; dark-ground illumination examination gave positive results.

TABLE IV.
Secondary and Tertiary Syphilis.
Mean serum titre, 15.

Case Number.	Diagnosis.	Results of Kline Tests.	Results of Wassermann Tests.				Titre.	History.
			One in Five.	One in Ten.	One in Twenty.	One in Forty.		
I	Early secondary syphilis.	++++	++++	++++	++++	++++	16+	Condylomata; dark-ground illumination examination gave positive results.
II	Secondary syphilis.	++++	++++	++++	+++	++	13	Iritis; sore twenty years earlier; rash now.
III	Late secondary syphilis.	++++	++++	++++	++++	++++	16+	Sore five years earlier; papules now.
IV	Secondary syphilis (treated).	++++	++++	++++	++	+	11	
V	Tertiary syphilis.	++++	++++	++++	+++	++	13	
VI	Tertiary syphilis.	++++	++++	++++	++++	++++	16+	Tertiary symptoms.
VII	Tertiary syphilis.	++++	++++	++++	++++	++	14	*Leontiasis ossea.*
VIII	Tertiary syphilis.	++++	++++	++++	++++	++++	16+	Meningo-vascular type.
IX	Secondary syphilis.	++++	++++	++++	+++	++	14	
X	Tertiary syphilis.	++++	++++	++++	++++	++++	16+	
XI	Secondary syphilis.	++++	++++	++++	+++	++	13	
XII	Tertiary syphilis.	++++	++++	++++	++++	++++	16+	
XIII	Tertiary syphilis.	++++	++++	++++	+++	+	12	
XIV	Tertiary syphilis.	++++	++++	++++	++++	+++	15	
XV	Tertiary syphilis.	++++	++++	++++	++++	++++	16+	
XVI	Congenital syphilis.	++++	++++	++++	++++	++++	16+	
XVII	Latent syphilis.	++++	++++	++++	+++	+++	14	Contact had syphilis.
XVIII	Latent syphilis.	++++	++++	++++	+++	+	12	Gave positive Kline reaction as blood donor.
XIX	Latent syphilis.	++++	++++	++++	++++	++++	16+	Gave positive Kline reaction as blood donor.
XX	Latent syphilis.	++++	++++	++++	++++	++++	16+	Gave positive Kline reaction as blood donor.

"False-Positive" Wassermann Reactions.

It has now been well established (by Sachs and others) that the positive reactions produced by the various Wassermann techniques in reliable hands may be grouped into two general types, as follows: (i) antibody reactions (syphilitic type) and (ii) lability reactions (general biological type).

Complement-fixation and flocculation reactions are the result of the same alterations of the serum globulins which are caused, either specifically and indirectly by antibody reaction, or non-specifically and directly by serum lability. Flocculation tests are usually more sensitive than the Wassermann test; but the opposite results when antigen-antibody complexes are in the stage of development, or when the optimum proportions in the circumstances do not induce visible flocculation.

Various infective diseases have been reported as causing the blood serum to react to the Wassermann test, those most frequently implicated being yaws, malaria, leprosy, trypanosomiasis, infectious mononucleosis, and relapsing fever. Serum from patients with yaws has always yielded a positive reaction. The reactions of the remainder are transitory (determined by testing over a period).

False positive reactions can be suspected when there are no history or clinical signs of syphilis and when contradictory results are obtained by complement fixation and flocculation tests. The titre of serum giving these false positive reactions is found to decrease rapidly, and the serum always gives negative results with the more sensitive (flocculation) tests and positive results with the less sensitive (complement-fixation) tests.

Both complement-fixation and flocculation methods must be used to evaluate suspected syphilitic serum. The technique of these tests as set out by their authors must be strictly observed and the complement-fixation antigen must have suitable colloid properties (be sufficiently coarse and hydrophobic). The need for verification tests shows that some of the modern techniques are too sensitive. This applies particularly to flocculation tests, and results in specificity being sacrificed for the attainment of greater sensitivity. Finally, more importance should be placed on the choice of suitable serum controls in routine diagnostic work.

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SUICIDES AMONGST RETURNED SOLDIERS OF THE 1914–1918 WAR.[1]

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THE data used in this paper have been obtained from coroners' depositions in New South Wales from 1914 to 1937 inclusive, and include all known suicides amongst returned soldiers during that period. Those who had enlisted but did not sail overseas have been excluded. The data are incomplete, in that it must be assumed that in many cases the fact that a suicide was a returned soldier was not mentioned at the inquest. In addition the information available was insufficient for the classification of patients into those who had seen active service and those who had not.

The suicide rate invariably falls in wartime. The jilted lover, the unhappy husband and those who are beset with great misfortune, find it far nobler to enlist or do patriotic work than to commit suicide. But those who evaded self-destruction during the war are likely to terminate their lives after the war, when life for any reason at all becomes intolerable for them. But on the other hand, the members of the Australian Imperial Force who went abroad were a picked body of men, young, mentally and physically fit. Such a class, under normal conditions, is very little prone to commit suicide. To what extent these two opposing factors influenced the suicide rate amongst returned soldiers is unknown.

We have little information about the number of returned soldiers in this State in any one year from 1914 to 1932; 257,519 soldiers and sailors were repatriated to Australia after the war. When the 1933 census was taken the number had fallen by 13·75% to 226,438, of whom 82,650 (80,590 solders and 2,060 sailors, all grouped together under the one heading of "soldiers" in this paper) were then resident in this State.[(1)]

Of the 5,450 males who committed suicide in New South Wales from August, 1914, to December, 1937, 634 or 11·6% were returned soldiers. From 1919 to 1937, both inclusive, 606, or an average of very nearly 32 a year, committed suicide. Table I shows the number of suicides each year and the age at which the suicide occurred. In 1920, forty

[1] Read at a meeting of the Section of Neurology, Psychiatry and Neurosurgery of the New South Wales Branch of the British Medical Association on September 7, 1944.

subjects took their lives. The excitement caused by the war had gone; returned soldiers were becoming unpopular, and many of them were finding it difficult to adjust themselves to civilian life. The influence of the financial depression of 1930 to 1932 is shown by the fact that no fewer than 120 wilfully terminated their lives during those three years. Since 1930 the number of suicides each year has tended to be above the average. This is proof of the fact that the suicide rate amongst any group of men increases with their advancing age. Although this fact may be masked during the present war, it is certain that the suicide rate amongst the first Australian Imperial Force veterans will become increasingly higher after the war than it was before it.

Age at Suicide.

The age at the time of committing suicide is shown in Table I. The two extremes were twenty and sixty-nine years. The table shows that there is little tendency for returned soldiers aged twenty-four years and under to commit suicide. But after the age of thirty-five years the risk of their self-destruction becomes greater. Men who had given up their studies and the opportunities of youth to fight for their country, found it difficult to settle down on their return from the war. When they reached the age of thirty-five years, they began to realize the opportunities they had lost. Many of them were in poor health or were overwhelmed by a chain of misfortunes. Life held no more for them, and suicide became the easiest escape from their difficulties.

The Suicide Rate Amongst the Returned Soldiers in New South Wales.

Table I was submitted to Mr. S. R. Carver, Government Statistician for New South Wales, for analysis. To him and his officers, I am under a deep debt of gratitude for their help and assistance freely given to me in my studies of suicide during the past ten years. Tables II, III, IV and V were prepared by Mr. Carver.

The deaths from suicide in the various age groups amongst returned soldiers may be compared with the deaths from suicides amongst all males in New South Wales in the same age groups and in the same years.

Tables II, III and IV indicate that the suicide rate amongst returned soldiers is higher than that of other males in the same age groups in the community. This is very apparent in Table V.

But as Mr. Carver rightly points out, the figures cannot be taken at their face value. They are subject to the following errors.

1. This series of cases is based on coroners' depositions and not on the official number of suicides. In some cases, when an open verdict was returned at the inquest, subsequent investigations showed that the balance of evidence favoured death by suicide. Such cases have been included in this series.

2. On the other hand, a number of cases have been excluded, because the fact that the deceased had been a returned soldier was not mentioned at the inquest.

3. The series includes men from other States, from New Zealand and from the imperial forces. But it excludes

TABLE I.

Showing the Year and Age Group at the Time of Committing Suicide.

Year.	20 to 24 Years.	25 to 29 Years.	30 to 34 Years.	35 to 39 Years.	40 to 44 Years.	45 to 49 Years.	50 to 54 Years.	55 to 59 Years.	60 to 64 Years.	65 to 69 Years.	Not Known.	Total.
1915	1	—	—	—	1	—	—	—	—	—	—	2
1916	—	—	—	2	—	—	—	—	—	—	—	2
1917	1	1	1	1	3	—	—	—	—	—	—	7
1918	3	4	3	1	3	3	—	—	—	—	—	17
1919	2	6	6	10	—	3	1	—	—	—	—	28
1920	5	14	6	8	5	2	—	—	—	—	—	40
1921	3	6	4	4	4	1	—	—	—	—	—	22
1922	3	2	3	3	8	3	1	2	—	—	1	26
1923	1	10	7	5	4	2	1	—	—	—	—	30
1924	—	6	9	4	5	2	1	—	—	—	—	27
1925	—	2	10	6	4	1	3	1	—	—	—	27
1926	—	7	6	7	14	6	2	—	—	—	—	42
1927	—	1	8	—	5	3	3	—	—	—	—	20
1928	—	—	6	9	8	8	2	—	1	—	—	34
1929	—	—	6	9	4	7	2	2	1	1	—	32
1930	—	—	5	16	9	7	5	4	—	—	1	47
1931	—	—	5	11	3	7	5	1	3	1	—	36
1932	—	—	—	10	12	8	4	1	2	—	—	37
1933	—	—	1	8	8	7	4	4	1	—	—	33
1934	—	—	1	11	9	6	3	2	1	1	—	34
1935	—	—	—	9	7	7	5	2	—	—	—	30
1936	—	—	—	4	12	8	8	1	—	1	—	34
1937	—	—	—	2	8	6	2	4	4	1	—	27
Total ..	19	59	87	140	136	97	52	24	13	5	2	634

TABLE II.

Death Rate from Suicide per 10,000 Living, in Groups shown. Males, aged Thirty to Sixty-nine Years.

Group.	Year.				
	1933.	1934.	1935.	1936.	1937.
Returned soldiers:					
Number exposed to risk	82,394	81,779	81,099	80,376	79,593
Suicides[1] (*b*)	33	34	30	34	27
Rate per 10,000	4·005	4·158	3·699	4·230	3·392
Other males:					
Number exposed to risk	472,486	481,615	491,573	500,770	511,446
Suicides (*c*)	163	155	180	134	144
Rate per 100,000	3·450	3·218	3·662	2·676	2·816
All males:					
Number exposed to risk	554,880	563,394	572,672	581,146	591,039
Suicides (*a*)	196	189	210	168	171
Rate per 10,000	3·532	3·355	3·667	2·891	2·893

(*a*) Official figures. (*b*) The series used in this paper. (*c*) (*a*) *minus* (*b*).

returned soldiers from New South Wales who committed suicide elsewhere.

4. The statistician's figures are based on particulars given in the 1933 census. These figures exclude all returned soldiers who did not serve in the Australian Imperial Force abroad. These figures are subject to two errors: (*a*) imperial and other servicemen, who migrated here after the war, and (*b*) enlisted men who did not actually embark, may, in spite of the safeguards taken to eliminate them, have been wrongfully included.

TABLE III.

Deaths per 10,000 from Suicide in each Age Group (Returned Soldiers).[1]

Age Group. (Years.)	Year.				
	1933.	1934.	1935.	1936.	1937.
30 to 34 ..	1·643	3·271	—	—	—
35 to 39 ..	2·894	4·531	4·516	2·673	1·987
40 to 44 ..	3·504	3·538	2·546	4·275	2·800
45 to 49 ..	5·405	4·161	4·320	4·306	2·981
50 to 54 ..	5·823	3·866	5·766	8·418	1·842
55 to 59 ..	11·306	5·070	4·447	1·935	7·170
60 to 64 ..	5·432	4·833	—	—	13·527
65 to 69 ..	—	12·240	—	8·598	7·513

[1] Based on populations shown in the appendix and in Table I.

TABLE IV.

Deaths from Suicide per 10,000 in each Age Group (All Males in New South Wales).[1]

Age Group. (Years.)	Year.				
	1933.	1934.	1935.	1936.	1937.
30 to 34 ..	2·029	1·889	2·776	1·710	1·569
35 to 39 ..	2·743	2·977	2·729	2·359	2·205
40 to 44 ..	3·609	2·094	3·235	2·953	2·773
45 to 49 ..	3·149	4·015	4·193	3·268	3·258
50 to 54 ..	4·330	4·823	4·764	4·358	2·368
55 to 59 ..	5·307	5·121	5·245	2·234	4·228
60 to 64 ..	5·605	4·166	2·751	3·859	4·241
65 to 69 ..	3·572	3·201	4·560	3·084	4·966

[1] Based on the official statistics for New South Wales.

5. If we disregard the fact that a certain number may have enlisted to avoid suicide, those who served with the first Australian Imperial Force abroad were a picked body of men, more physically fit and more mentally stable than their fellows. The suicide rate amongst them therefore should be theoretically less than that of other males in the same age groups in the community. Apart from the fact that they required rehabilitation and readjustment to civilian life on their repatriation, they have since the war been exposed to the same worries and difficulties as have their fellow citizens. If suicide is more common amongst them than it is amongst their fellows, then their war service must be held directly responsible.

The statistical analysis of the cases in this series is subject to the above qualifications and cannot therefore be regarded as statistically accurate and of mathematical precision. But, as it seems to indicate that returned soldiers in New South Wales are more prone to suicide than their fellow males in the same age groups, it is of great importance and strongly indicates the need for further research.

Place of Suicide.

Four hundred and ten or 64·6% of the suicides occurred in Sydney, 23 or 3·7% in Newcastle and 200 or 31·7% in other parts of the State. One occurred on a troop ship returning to Australia. (For practical purposes the population of the Sydney metropolitan area is here regarded as being equal to that of all other parts of the State.) That returned soldiers should commit suicide almost twice as frequently in Sydney as in the remainder of the State is a surprising fact. Restless, unhappy soldiers, it would seem, crave for the excitement of cities, where their loneliness is intensified and their struggle for existence becomes more acute.

Social Condition.

Two hundred and thirty-seven of the suicides were single, 296 were married, 21 were widowed, six were divorced and in 74 cases the social condition was not stated. Of the 296 married, 96, or nearly one-third, were living apart from their wives. War marriages, so often hasty and ill-advised, are too often doomed to end in tragedy.

Nativity.

The nativity of the patients is shown in Table VI.

Only 410, or 64·6%, were native-born Australians. In America, too, it has been found that the suicide rate amongst immigrants is higher than it is in their native lands.[2] Immigration is at times but a sign of mental restlessness, which may terminate, even after many years' residence in a foreign country, in suicide. If there is to be a large influx of migrants to Australia after this war, many suicides must be expected amongst them.

Rank.

Twenty-five of the patients were officers, but this number is probably too low. In most years from 1914 to 1929, the

TABLE V.

Actual and Expected Number of Suicides amongst Returned Soldiers.

Year.	Recorded Figures.		Calculated on Same Rate.		Difference.	
	Returned Soldiers.	Other Males.	Returned Soldiers.	Other Males.	Returned Soldiers.	Other Males.
1933	33	163	29	167	−4	+4
1934	34	155	27	162	−7	+7
1935	30	180	30	180	—	—
1936	34	134	23	145	−11	+11
1937	27	144	23	148	−4	+4

TABLE VI.

Australasia. (424)		Great Britain. (174)		Dominions. (8)		Europe. (12)		Nativity Unknown.
New South Wales ..	323	England	124	India	5	Russia	4	16
Victoria	49	Scotland	27	South Africa ..	3	France	2	
Queensland ..	14	Ireland	23			Italy	2	
South Australia ..	12					Finalnd	2	
Tasmania ..	11					Poland	1	
Western Australia ..	1					Norway	1	
New Zealand ..	14							

annual suicide rate amongst the officers in the American army was far higher than it was amongst the rank and file.[2] In the present series four suicides were medical officers, and nine had war decorations; of these, three had more than one decoration. This confirms my clinical experience that some decorated soldiers are manic-depressives who won their war medals during attacks of mild mania.

Season.

The month and seasons in which the suicides occurred are shown in Table VII.

TABLE VII.

Months.		Seasons.		
January	62			
February	45			
March	58	Spring	173	335
April	50	Summer	162	
May	56			
June	52			
July	36	Autumn	164	299
August	47	Winter	135	
September	62			
October	53			
November	58			
December	55			
Total	634			

The series conforms to the accepted rule that suicide is more common in the hot than in the cold months of the year.

Method of Suicide.

The methods used were: poison, 180 cases, or 28·4%; shooting, 159 or 25·1%; cutting, 79 or 12·5%; drowning, 57 or 9%; poisonous gases, 53 (coal gas 51, motor-car exhaust two); hanging, 53 or 8·3%; precipitation from a height, 27 or 4·3%; under trains, 19 or 3%; other methods, seven or 0·9%. The methods used do not appreciably differ from those used by all males in New South Wales during the period under review.

Strychnine (79 cases), phenol preparations (32) and the cyanides (29) were the commonest poisons used. Nine subjects took huge overdoses of sedatives, such as paraldehyde, "Luminal" and morphine preparations. This is a sharp reminder to us that in prescribing sedatives for patients suspected of contemplating suicide, the quantities supplied at any one time should be sublethal.

Of the 159 who shot themselves, 81 used revolvers, 45 pea-rifles (22 bore), 29 shot-guns and four other weapons; 136 shot themselves in the head and only 23 in the chest. There is a favourite site for shooting with each type of weapon used. Those who use revolvers select the right temple, those who use rifles prefer the forehead, whilst it is most common for those who use shot-guns to put the barrel in the mouth and pull the trigger.

Lack of Relatives and Friends.

Two hundred and sixty-six or 42% of the suicides were living alone in residentials, hotels, camps or poor-houses, or were without home and shelter. Of these, 147 or 22·9% of the series had no relatives or friends. In fact, no matter what physical or psychological factors may predispose a patient to suicide, intense loneliness often precipitates the final act. The things of the world have failed him, and death is an inviting escape from his difficulties. The treatment of such subjects consists essentially in giving them shelter and protection. In other words, the appeal must be to their emotions and not to their intellect. This fact has long been realized by many religions, but it is still hardly appreciated in modern medicine.

After the war, the promises that have been made to them during the war were so far forgotten that many (114 in this series) could not even find employment. In some cases, conflicts occurred between them and the Repatriation Department over pensions. In ill health, worried and friendless, they were afraid of life, not of death. The bitterness felt by many of them was expressed in a note left by one: "It would be better if the Cenotaph was made of bread and cheese—a Digger or two might be able to get a feed off it." The tragedy was, that whilst they could have got assistance, they were too proud to ask for it.

Alcohol.

Two hundred and fifty-seven or 40·1% were "heavy" alcoholics. Of these, 142 were living alone and 76 had no relatives. Two were morphine addicts. Alcohol is a prolific cause of suicide. Many of those who are worried seek first their escape in alcohol, and when it fails them, they commit suicide. Oftentimes their very alcoholism determines their fate. Some of these patients were acutely hallucinated and terrified. Others had been drinking heavily for weeks; they could not eat or sleep and were tremulous and acutely depressed. During previous bouts some had repeatedly threatened suicide; a few had actually attempted it.

The causes of their alcoholism were numerous—unemployment, marital difficulties, love affairs, financial difficulties. Some had serious bodily illnesses, such as phthisis or heart disease, and could not face the future. Others had frank neuroses and psychoses. But their very alcoholism condemned them. In a community where so many, including even doctors, give thanks to God that they are not like the rest of men, alcoholic returned soldiers become outcasts. The virtues of their past were forgotten and only their obvious sins remembered. Some sank lower and lower in the social scale, and became swagmen, inmates of charitable institutions or starving paupers in the gutter. Some were sensitive and realized their social descent. As one wrote: "Only a drunk, no use on earth." Another wrote: "One of Dr. ——'s interesting cases. If of any use to him let him make use of my head. A war wreck and a booze fiend." During the war he was an interesting surgical exhibit. After the war he was a drunken, forgotten hobo. The present position is this: unless treatment can be improved, chronic alcoholism will determine the suicide of many soldiers in the present Australian armies.

The Cause of Suicide.

The causes of suicide can be divided into three great classes—physical, psychological and psychiatric. In many of the cases, more than one cause is apparent. Thus an unhappily married man, with a gastric ulcer, may commit suicide during an attack of acute melancholia. Again, without a personal knowledge of patients, it is impossible to classify many of them on the information available. For example, the term "ill health" is used at inquests to cover any physical or psychiatric disease. Similarly it is often impossible to say whether a patient's mental depression was a normal response to some great worry or whether it was true melancholia.

In the final analysis, as each patient presents his own problems, we are forced when studying suicide to argue from broad principles, and not from the many exceptions to those principles. In other words, we must follow the cardinal rule in philosophy, to argue from the general to the particular and not *vice versa*—a defect in reasoning that has been responsible for many false concepts in modern medicine.

Physical Causes.

More than one physical disease was present in many cases. Men with gunshot wounds may develop any bodily illness. For practical purposes the subjects may be divided into two classes—namely, those who were battle casualties and those with physical illnesses. Individuals may appear under both headings.

One hundred and thirty-two had had gunshot wounds, 59 had been gassed and four had been both wounded and gassed. Gunshot wounds were distributed as follows: head,

47; lower extremities, 23; upper extremities, 14; body, 10; not specified, 42. Eight men had lost an eye, ten a leg and seven an arm, and one had lost both one arm and an eye. The 26, or 4·1%, who had lost eyes or limbs, felt themselves too handicapped to compete successfully with other men. Some of those who had lost an eye were haunted by the fear of blindness.

Many complained of continual pain and drank heavily to alleviate it. In some cases the exaggeration of pain was but symptomatic of an underlying neurosis. But others had undergone operation after operation, and had lost all hope of recovery. They preferred death to chronic invalidism and being a burden to others. In the case of others, however, their war wounds seemed to affect them but little, and their suicide was due to other causes.

Of the 47 men (7·4% of the series) with head wounds, nine had lost an eye and six were traumatic epileptics. Many had undergone craniotomies, and in a few cases pieces of shrapnel were still in the brain.

A history of head injury is common in any series of suicides. The injury may have been apparently trivial; it may have been so serious that an extensive craniotomy was necessary. Most of these subjects complained of headaches, which ranged from a constant, dull, aching pain, to exacerbations of such severity that they were incapacitated for days. The majority found difficulty in concentrating, and lost interest in their families and work. Some became emotionally unstable, wept easily and were irritable. Some drank excessively, but they had lost their tolerance for alcohol and became drunk very quickly. A few became criminals. As time went on, they became so depressed that their suicide seemed to be almost inevitable. As one wrote to his wife: "You will be glad to know that at last I am at rest after fifteen years of suffering."

Six of those gassed were almost blind and others were afraid of blindness. Two, who spent most of their time in darkened rooms, murdered their wives and families. Others were afraid of phthisis. One man, after his interview with a medical board, wrote: "My report from them about my chest was very bad."

The main physical disorders specified were: heart disease, 37 cases; gastric conditions, 20 cases; headaches, 27 cases; acute fevers, 27 cases; phthisis, 25 cases; disabilities following accidents, ten cases (four head injuries); operations, ten cases; rheumatism, arthritis *et cetera*, ten cases; other conditions, 17 cases.

The high incidence of heart and gastric conditions suggests that in many cases the condition was functional and not organic. It is true that some men were desperately ill with failing hearts or suffering from repeated hæmorrhages from gastric ulcers; but the majority were obsessed with the gravity of their illness and were afraid of impending death. In fact, in the majority of cases it was the fear of the possible consequences of their disease, not the disease itself, that precipitated their suicide. Thus a patient with leucoplakia and others with gastritis were convinced that they had cancer. One was convinced that he had venereal disease and committed suicide before the response of his blood to the Wassermann test could be known; the response proved to be negative. In a few cases the men's fears were intensified when they were told to go into hospital or whilst they were awaiting operation.

Acute fevers, especially influenza, are often followed by intense mental depression, which may end in suicide. The fact that twelve of these men were stated to have malaria suggests that malaria may precipitate mental depression and self-destruction.

Of the twenty-five men in this series suffering from phthisis, seventeen were aged between thirty-five and forty-nine years. The two extremes were twenty-six and fifty-nine years. Six committed suicide in hospitals. Whilst the majority of the cases were complicated by worries, alcoholism or loneliness, in some instances phthisis itself precipitated the suicide. Some men became depressed when the diagnosis was made. One wrote: "I cannot live in a consumptives' home, knowing yourself to be what you are, only half a man."

Psychological Causes.

The psychological causes met with were: financial and business worries, 219 cases; unhappy marriages, 144 cases; love affairs, 46 cases; accusation of crimes, 25 cases; illnesses and deaths of relatives, 25 cases; other causes, 12 cases. It must, however, be understood that many patients have been included under more than one of the above headings.

One hundred and fourteen of those with financial worries were unemployed. Some had failed in business, or were being pressed for the payment of their debts. Some living on returned soldier farms were worried by the dry seasons. Many were destitute, some through their dissolute habits. Some had pawned everything they possessed. A few in desperation took lottery tickets, hoping that a win would solve their problems.

Of the 144 unhappily married men, 96 were living apart from their wives. The causes of their unhappiness were many—infidelity, jealousy, financial difficulties, religion and the like. Two had been married only a few weeks. Some were in arrears with maintenance orders and preferred to commit suicide rather than pay them.

Many of the 46 who committed suicide on account of love affairs were married or had liaisons with married women. Some were deserted by their paramours when all their money had gone. Some had been jilted, a few were to be married in the near future.

The crimes committed were: embezzlement, nine cases; stealing, seven cases; sexual crimes, four cases (two of which were of incest); others, five cases. The men's financial difficulties are reflected in the frequency of embezzlement and stealing. One "as a last throw" had attempted to rob a bank.

The deaths precipitating suicides were those of wives, parents or near relatives. Three committed suicide on the very day the death occurred.

Psychiatric Causes.

Some of the patients were quiet and reserved, or were "easily worried by trifles". Some "couldn't concentrate" or "were very tired and needed a rest". The great majority were sleepless and depressed. Some would sit silent and self-absorbed for hours; others were restless and agitated. Anxiety symptoms were common—fear of the future, fear of disease, fear of losing pensions or property. In a few cases, melancholia, at times of a recurrent type, was present, but the borderline between melancholia and normal worry could not be defined. Some had "shell shock". A proportion of these were neurasthenics; others had "fear states" and would tremble at the slightest noise. Three had fugues and committed suicide in towns far distant from their homes. Ten were paraphrenics with ideas of reference or of persecution. One was convinced that he had syphilis and had infected hundreds of others. Three thought that their wives were unfaithful. Thirty-one, or 4·9%, had been patients in mental hospitals or psychiatric clinics. These were mostly subjects with recurrent alcoholism and melancholia. In the great majority of instances, their suicide occurred within six months of their discharge from hospital. Twelve deaths occurred in mental hospitals; of these alcoholics comprised the largest group. One was a case of Huntington's chorea.

Twenty-two, or 3·5%, were epileptics; six of them had traumatic epilepsy. The high incidence of epileptics in this series suggests that either many epileptics were not recognized as such on their enlistment, or their epilepsy was the result of their war service.

One hundred and sixty, or approximately one in four, left notes, most of which told of their ill health, worries, persecution and difficulties, and stated that they could "no longer carry on" or "stand the strain". While some protested their sanity, others insisted that they must be insane. Some expressed their preference for death. "I had four years at the war and am not afraid to die." "Death is less horrible than my present position."

Some expressed melancholic ideas of unworthiness—"a failure"; "not fit to live". A few were sarcastic: "Victory! I give the lie direct." Whilst some were abusive, others left love letters, or farewell notes, or wills. One left a misleading note about his identity.

Thirty-nine, or 6·1%, had previously attempted to suicide. Of these, four had made two previous attempts and another four had made three previous attempts. The majority of these attempts were made within two months of the successful attempt. In two cases, however, it was made more than ten years before. Sometimes only hours separated the unsuccessful and the successful attempts. The majority of the thirty-nine had frequently threatened to kill themselves.

One hundred and twenty-nine, or just over one in five, had threatened suicide—"tired of life", "full of pain and suffering", "life is not worth living", "I would sooner die than have an operation". Fifty-five of the 129 had often threatened suicide. They were mostly alcoholics who made the threats whilst drunk. Ten had also threatened to kill their wives or girl friends. The majority of the last-mentioned put their threats into action.

Eighteen were guilty of murder before their suicide. Revolvers were the lethal weapons used in most of the cases. Six of the nine men who murdered their wives killed all their children as well—one child in one case, two children in three cases, and three children in two cases. Domestic unhappiness, delusional ideas, anxiety about the future, were the main causes of these domestic tragedies.

Eight murdered girls. In five of these cases either the man or the woman was married. The final case was that of a man with delusions of persecution, who killed a man and three women.

Nine cases came under the heading of attempted murder and suicide. The intended victims were a wife, a mother-in-law, five girls and two men. Two of the men who shot girls were married.

The incidence of murder or attempted murder and suicide (27 cases, or one in 24 suicides) amongst returned soldiers in New South Wales during the period under review does not differ markedly from that amongst other males in the same age groups in the State.

Suicides in Hospital.

Of the 25 who suicided in general hospitals, 17 did so in military hospitals. Of the latter, five were phthisical and four had neuroses.

Suicide Pact.

The only case of suicide pact in the series concerned a married man and a married woman, who were both "heavy" alcoholics.

Nurses.

I have a record of only one suicide amongst returned nurses during the period under review. She was aged forty-eight years, and had a *carcinoma uteri*. (At the time of the 1933 census, 625 returned nurses were then resident in this state.)

Can Suicide be Prevented?

Can suicide be prevented? The question must be answered from a survey of the historical, statistical and clinical evidence. Those who, for any reason at all, are in danger of having their fear of death overcome by their fear of life, must have a power higher than themselves to save and protect them. Religion is their traditional refuge. But even this is in itself insufficient. They also require material assistance and a trusted confident, who will lessen their load of sorrow. From a psychiatric point of view, no matter how scientifically they may be treated, even if shock treatment and leucotomy are employed, unless the patient has implicit trust in the doctor, all is in vain.

It is my opinion (and this opinion is based on an analysis of known facts and on clinical experience, not on a blind adherence to traditional beliefs) that the rigid observation of suicidal patients destroys the confidence of the patient in himself and in his medical attendants. But the winning of their confidence requires special training for doctors and nurses. It is not given by general hospital experience, nor is it encouraged by traditional military procedure.

Unless these facts are grasped, suicides amongst the members of the present Australian armies will be just as common after the present war as they have been since the last.

Acknowledgements.

I am under a deep debt of gratitude to the Crown Law Department of New South Wales for giving me access to coroners' depositions; to Mr. R. S. Carver, Government Statistician of New South Wales, for working out statistical data used in this paper; and to Professor Harvey Sutton, of the University of Sydney, for his many suggestions and for keeping me informed of the current literature in suicide.

References.

(1) P. S. Carver: Personal communication.
(2) Dublin and Brunzel: "To Be or Not to Be", 1933, page 406.
(3) Dublin and Brunzel: *Loco citato*, page 32.

Appendix.

The number of males (New South Wales) who served abroad with the Australia forces in the war of 1914-1918 classified according to age at June 30, 1933, is shown in Table VIII.

TABLE VIII.

Males who Served Abroad with the Australian Forces in the War of 1914-1918, Classified according to Age, June 30, 1933.

Age Group. (Years.)	New South Wales.			Australia.		
	Returned Soldiers.	Returned Sailors.	Total Males with War Service.	Returned Soldiers.	Returned Sailors.	Total Males with War Service.
25 to 29 ..	—	8	8	—	13	13
30 to 34 ..	5,537	522	6,059	14,452	1,072	15,524
35 to 39 ..	26,984	538	27,522	74,899	1,346	76,245
40 to 44 ..	22,319	420	22,739	61,860	893	62,753
45 to 49 ..	12,667	231	12,898	33,670	426	34,096
50 to 54 ..	6,651	191	6,842	18,279	303	18,582
55 to 59 ..	3,441	83	3,524	10,069	141	10,210
60 to 64 ..	1,794	39	1,833	5,322	84	5,406
65 to 69 ..	624	12	636	1,909	34	1,943
70 to 74 ..	197	5	202	588	7	595
75 and over ..	46	—	46	133	1	134
Not stated ..	330	11	341	918	19	937
Total.. ..	80,590	2,060	82,650	222,099	4,339	226,438

Reports of Cases.

FRACTURE OF THE ATLAS.

By KEVIN JOHNS,

Flight-Lieutenant, Royal Australian Air Force Medical Service, Medical Clearing Station, Admiralty Islands.

FRACTURE of the atlas is sufficiently uncommon to merit the reporting of the following case.

Clinical Record.

Tani, a native of unknown age, arrived by native canoe on the afternoon of June 12, 1944. The preceding day he had been lying asleep when a falling coconut struck him forcibly at the junction of occiput and neck. He was unconscious for a short period. Since then, he had experienced severe continuous pain over the posterior arch of the first cervical vertebra and inability to move his neck. However, he was ambulant and had no other symptoms.

On examination, a large hæmatoma and an area of marked tenderness were present corresponding to the site of pain, maximal slightly to the right of the mid-line. The neck muscles were in spasm, producing the typical "poker-neck" (see Figures I and II). There were no neurological signs

FIGURE I.
Showing swelling over the first cervical vertebra.

FIGURE II.
Showing spasm of the neck muscles.

indicative of cord injury. Radiographs of the neck revealed a fracture of the posterior arch of the atlas on the right side, just behind the lateral mass, with some right lateral displacement. The odontoid process was intact (see Figures III and IV).

A plaster cast, with the head straight, was applied, and produced immediate complete relief of pain. On July 9 (that is, four weeks later) the plaster cast was removed. The patient then had full flexion and extension of the neck, but slight limitation of rotation to the right. There was no pain or tenderness. A progress X-ray film failed to reveal any fracture line, and it was considered that full union had occurred. He was then returned, fit, to his native village.

Discussion.

The commonest cause of fractured atlas is a fall on the head from a height. Direct violence fractures are unusual, owing to the anatomical position of the bone, the lack of a large dorsal spine, and the protection afforded by the overhanging occiput and thick neck muscles. In such cases the head is held rigidly and is often supported by the hands. In 50% of cases, paraplegia from cord compression is present. Marked forward displacement with cord compression usually does not occur unless the transverse ligament of the atlas, or the odontoid process of the axis, is broken. In such cases death usually results.

In those cases of cord compression in which the patient survives the accident, it is necessary to employ skeletal traction by means of skull calipers or by a webbing sling under chin and occiput, till radiological reduction is obtained.

In uncomplicated cases, fixation in a plaster cast with the head straight is sufficient.

In this case it seems likely that the fracture was due to direct violence applied over the first cervical vertebra with the head flexed on the spine. In such a position, the posterior

FIGURE III.

arch of the first cervical vertebra is nearer the skin than usual, and is not fully protected by the neck muscles. The atlas was evidently driven forward to the wedge so formed by occipital condyles and axis, and the bone fractured. Further forward displacement was prevented, so fracture of the odontoid process did not occur, and cord compression was avoided.

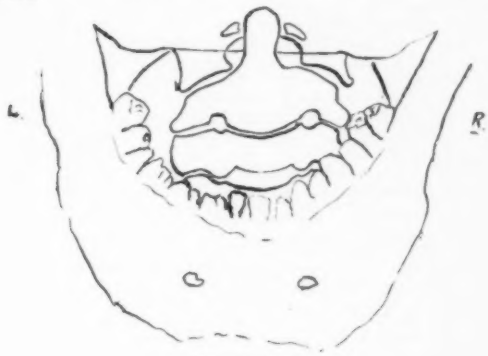

FIGURE IV.

Acknowledgements.

Acknowledgements are due to Air Vice-Marshal T. E. V. Hurley, Director-General of Medical Services (Air), and to the commanding officer of this unit, for permission to publish this article.

Reviews.

A SYNOPSIS OF HYGIENE.

"PERHAPS never in the history of medicine has there been a period when more revolutionary changes have taken place than in the present war." This sentence from the preface to the eighth edition of Jameson and Parkinson's "Synopsis

of Hygiene" indicates the reason for the appearance of another wartime edition so soon after its predecessor, which was published but two years ago.[1]

The volume consists of ten sections and four appendices. It covers the whole of the ever-expanding field of public health and social medicine. There is one uncommon addition—before Section I there has been introduced a five-page summary of the British Government's White Paper on "A National Health Service". Those who are studying the trend of affairs in respect of the future of the profession in this country, and who are anxious to familiarize themselves with what is occurring overseas, will find this summary most useful.

The synopsis has many good points, notably the authors' custom of interpolating bibliographical references at the ends of paragraphs rather than at the ends of chapters, or in the form of footnotes; this makes for easy and uninterrupted perusal.

Attention must, however, be drawn to the references to anti-diphtheria prophylaxis, as here the authors advise procedures not in accordance with the teachings in this country. It is stated, for instance, that prophylactic injections "are best made intramuscularly". The director of the Commonwealth Serum Laboratories in the official handbook advises subcutaneous injection of such agents. On the following page also alum precipitated toxoid is referred to as being suitable for use for older children and adults. This again is contrary to the advice of the director, who in Australia at least should be taken as a guide by medical officers of health undertaking mass immunization against diphtheria.

Naturally the sections dealing with public health law have but little application to Australia, but allowing for this and the divergencies from local practice mentioned above, the book remains just as useful a work of reference as its predecessors.

VITAL STATISTICS IN THE TROPICS.

DIFFICULTIES arising from poor communications, language ambiguities and native prejudice—to mention but a few—have long served the apathetic devotee of routine in native administration as an excuse for neglecting the irksome task of collecting vital statistics relating to native population. It has commonly been accepted that the collection of sufficiently trustworthy and detailed information is beyond the capacity of local officials. Inaccurate or incomplete data being worse than valueless, costly efforts to obtain them have been considered unwarranted.

It is probable therefore that the title of Major Edge's book "Vital Statistics in the Tropics" will conjure up for most, at first encounter, repellent visions of complex algebraic formulæ crystallizing pages of involved mathematical disquisitions upon a subject of no practical importance to the health officers in the tropics.[2]

Nothing could be further from reality, for the author has "omitted the conventional features of the vital statistics handbook . . . so that space may be devoted to enlarge upon matters hitherto unheeded". In pursuit of his purpose he has by his original approach to and inspiring treatment of his subject presented it in so attractive a fashion as to win the unquestioning agreement of even the most unmathematical sceptic to his contention that the development of an adequate statistical system in native populations is not only urgently necessary but ultimately practicable.

The unpromising title may then be a merit, for it relates a topic conceived by many to be dull and unprofitable, to a discourse which effectively establishes that it is neither of these things. The book, even if opened with misgivings, will be read by the intelligent with increasingly eager interest to the end, and its final closure will be no more than an unnoticed milestone passed early on a meditative journey of exploration into the social verities and their meanings, with the author as a guide.

A ruthless and ambitious enemy, not without some cultural affinities with their native population, has overrun some of Britain's most valuable colonial possessions. Under the stress and shock of war subjected people have been profoundly stirred to new views of life. The difficult problem of post-war administration must be approached and solved from new angles. There can be no return to a pre-war "normal".

For post-war reconstruction the administration must have at its disposal a wide range of facts covering the indigenous population—its dimensions, its structure, its birth rate, its death rate and its incidence of disease. Such facts can be provided only by a soundly established vital statistical system.

Primary requirements include reliable facts relating to number and distribution of population and its composition in respect of sex, age, civil state and occupation. The difficulties besetting the collection of such data in countries where natives under the influence of mistrust, tabu, ignorance and the like will intentionally or unintentionally return incorrect statements, are admitted by Major Edge. Indeed, he calls attention to a number culled from widely diverse sources in various parts of Britain's colonial empire. These illustrate a variety of headings, and many are of a type likely to be overlooked, even by officials with some experience of native psychology and administration. The author insists, however, that detailed and sympathetic study of the social organization and culture, supplemented by free and friendly gossip with the people, will not only reveal the pitfalls into which the census officer may stumble, but also actually furnish him with hints for alternative methods, the exploitation of which will facilitate the collecting of quite accurate information.

The economic and effectual disposition of hospital and out-patient facilities can be determined only from accurate sickness records. Numerous difficulties will be encountered here owing to native misconceptions of the origin and nature of disease. Much may be learned by closely studying the native healing art and much achieved by enlisting the cooperation of the local medicine man.

A standard disease nomenclature is essential if factors of morbidity and mortality are to be classified explicitly and concisely to permit the successful study of the laws of disease as exhibited in the human organism. Suggestions for such a nomenclature are made, it being emphasized that whilst the number of separate titles should represent an irreducible minimum and should admit comparison with the corresponding titles in the International Lists of Causes of Death, the selected list for any country must be determined by the local health authority for that country's specific requirements.

The prime essential of any statistical method is that it should be planned in full knowledge of the local organization and culture so that the methods of approach and application shall not be too far removed from the local customs, but shall rather be adopted to exploit these. It must, too, be elastic and capable of development to a maximum detailed efficiency during successive years.

Major Edge points his arguments with historical references and anecdotes of actual medical, anthropological and sociological experience in many British colonies. In this way he succeeds with effortless aplomb in converting what might well have become a dull discussion of an administrative problem into a discourse of absorbing interest.

Some references are made to cultural features of natives in Pacific islands administrated by Australia, but special problems of aboriginal protection on the mainland do not appear. Nevertheless the methods of approach outlined and the trend of thought developed are as proper to native administration in Australia as to that in the British colonies for which they are primarily intended.

This book carries for Australia a message as important as it is readily apprehended. The story of native administration on the mainland and in the Pacific territories presents, like that of British colonies, a multitude of examples of uneconomic and misdirected endeavour or of apathetic defeatism, attributable to lack of reasonably accurate vital statistics. This book should be read carefully by all in the Commonwealth services directly or indirectly concerned with native administration, and its close study should be obligatory upon the cadets being trained for the administrative service of reoccupied New Guinea.

[1] "A Synopsis of Hygiene (Jameson and Parkinson)", by G. S. Parkinson, D.S.O., M.R.C.S., L.R.C.P., D.P.H., Lieutenant-Colonel, R.A.M.C. (retired), with a section on personal hygiene, by G. P. Crowden, O.B.E., D.Sc., M.R.C.S., M.R.C.P., T.D.; Eighth Edition; 1944. London: J. and A. Churchill Limited. 8¼" × 5¼", pp. 734. Price: 25s.

[2] "Vital Statistics and Public Health Work in the Tropics", by P. Granville Edge, with a foreword by Major Greenwood, D.Sc., F.R.C.P., F.R.S.; 1944. London: Baillière, Tindall and Cox. 8½" × 5½", pp. 200. Price: 12s. 6d.

The Medical Journal of Australia

SATURDAY, FEBRUARY 24, 1945.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

MEDICAL CERTIFICATES: SOME RECENT OBSERVATIONS.

MEDICAL PRACTITIONERS, particularly those engaged in busy general practice, welcomed the statement from the Commonwealth Department of Health on medical certificates in relation to civilian requirements that was published in this journal in the issue of January 27, 1945. Since the outbreak of war the demand for medical certificates has increased beyond all expectations or previous imaginings. We have previously pointed out that people, impelled by the idea that medical certificates are the "Open Sesame" to the storehouse of goods in short supply, have so overwhelmed practitioners with their demands, many of them quite unreasonable, that the genuinely sick have often been all but pushed aside by the certificate seekers. The Federal Council interested itself in the matter and found a sympathetic collaborator in the Director-General of Health. The result was that instructions were given that conditions demanding the production of a certificate from a medical practitioner should be as far as possible restricted in number. It has been held by some of the British Medical Association Branch Councils that in certain circumstances statutory declarations might take the place of medical certificates, and in actual fact the requests for certificates from doctors have been so numerous that the adoption of this expedient would have given some relief to overworked practitioners. But after all is said and done and every effort has been made to eliminate the need for medical certification, it will be clear that in the present state of affairs medical practitioners must be prepared to issue many more certificates than they issued in ordinary pre-war days.

At the present time many certificates are sought by persons who wish to change or to leave their employment. When work in a particular occupation or industry is actually harmful to the worker or because of the worker's physical or mental state is likely to become harmful, it will be agreed by everyone concerned that if satisfactory adjustments cannot be made, the worker should seek another occupation. Since some occupations are more attractive than others—and human nature being what it is, the distant field of another occupation is often greener than that of the one followed—many people wish to change their work, quite apart from questions of health. The war situation and the manpower requirements demand some control of these people, and the only person who can determine whether an occupation is prejudicial to the health of a worker is a medical practitioner possessed of two qualifications. The first of these can be claimed by every zealous practitioner and is the ability to judge the state of the patient's health and his reaction to changes of environment. The other qualification is rarer and is a knowledge of the nature of the patient's work and of the conditions in which it is performed. In this matter it cannot be too strongly emphasized that over much credence should not be placed on the unsupported statements of a patient. The medical practitioner to all intents and purposes assumes the role of an industrial medical officer, one who is engaged in the practice of industrial hygiene. For this type of practitioner a knowledge of industrial processes is indispensable. That some reference should be made to this subject is evident from a carefully prepared article coming from a non-medical source. In this instance the onlooker does see most of the game, if game it can be called, and incidentally suffers on account of it. Reginald Lloyd, writing in the January, 1945, number of the *Laundry Advertiser*, states that medical certificates show that Australian girls are lacking in stamina. His opening sentence holds a challenge: "If a survey were made of the conditions surrounding medical release certificates, that have been issued to Australian female juveniles, exempting them from work in laundries, which are statistically proven to be among the most healthy avocations in the United States, it would compel the startling conclusion that the average young Australian girl is greatly below the average in physical stamina." To the general run of people, work in a laundry at once calls to mind the washtub and the labour carried out in the family washhouse. In Mr. Lloyd's opinion, and we agree with him, the conclusion that the average Australian girl was deficient in stamina would be alarming from the point of view of national health. He holds that the work assigned to females in laundries makes considerably less demand on their physical strength than does the family washing in the home. "It is always a surprise to people unacquainted with laundry work to learn that rarely, if ever, does a female worker come into contact with water." Factory rules, we read, prohibit females from working on washing machines and on "hydro extractors"; these jobs are assigned to male workers. An inspection of one of the well-known laundries in Sydney has shown that these statements are true and that "no arduous physical work is required of the female employee". The only condition that may cause difficulty in laundry work is apparently the moisture in the atmosphere. This will vary to some extent with the type of building housing the laundry, the arrangements made for ventilation and the placement of the washing machines and "hydro extractors" in relation to the ironing machines

and other apparatus in the care of the girls. Even in the best type of laundry an increase in the atmospheric moisture is unavoidable. As far as can be gathered wet bulb temperature readings are not taken. It may be remarked incidentally that the use of the kata thermometer in laundries should be insisted upon and some standards should be laid down so that the best possible conditions compatible with efficiency might be obtained. In the laundry that was inspected the girls were suitably clad in light garments and no sign whatever of discomfort could be detected. But this is not really pertinent to the present discussion. Mr. Lloyd's article has been used to point a moral. We may therefore, particularly at the present time, apply to industry in general his contention that medical certificates were originally introduced into industry to serve the dual purpose of protecting both employee and employer against imposition in determining whether or not an individual was physically capable of performing a task on duty. This, he holds, is still their province. "In practice, however, it is contended, by many industrialists, that they do not work out that way, as all the employee need do is to apply to a doctor for a certificate exempting him or her on medical grounds from a distasteful duty and the request is granted." The truth of the matter is that the certifying doctor is really in the position of a referee—he knows, or should know, neither employee nor employer as such; he should have before him nothing but a man or woman with certain attributes, certain ability, and also with duties of a nature known and understood by him.

What then is to be done in the matter of certification in industry at the present time? Let us look at the layman's suggestion. Mr. Lloyd writes that something better than the existing system of issuing medical release certificates is an imperative necessity. He thinks that there might be formed a "medical fitness board" presided over by an appointee of the British Medical Association, preferably a hospital doctor or superintendent, and composed of industrialists as well as medical men. Employers would, he thinks, have the right to bring before the board any employee whose certificate they challenged. In this way "the knowledge of the industrialists would be at the service of the doctors". This would be an acceptable arrangement provided the "industrialists" acted only in an advisory capacity—the decision regarding any employee's condition would have to remain in the hands of the medical members of the board. Something of the kind has been done for some time in Queensland. (See THE MEDICAL JOURNAL OF AUSTRALIA, January 22, 1944, page 75.) A committee was appointed in Brisbane consisting of two representatives each of the Queensland Branch of the British Medical Association, the Chamber of Manufactures and the Trades and Labour Council. The committee was set up in an endeavour "to smooth out some of the difficulties concerning certification in relation to absenteeism in industry and certificates generally". The Trades and Labour Council subsequently withdrew their representatives from the committee. The time seems appropriate for the several Branches of the British Medical Association in Australia to discuss this matter. Several of them have committees to which particular problems can be referred. They would have to decide whether any separate committee should be set up and whether it should have non-medical advisory members. Sight should not be lost of one important consideration. This journal and Australian medicine generally must be concerned with the correctness and reliability of doctors' certificates, but if an industry is constantly losing employees, the industry must ascertain the reason. If anything can be done to make employees satisfied with their work and their conditions of work, it should if possible be done. Doctors cannot be moving spirits in this, but in matters connected with it that come within their ambit they will be willing to collaborate for the good of everyone concerned.

Current Comment.

THE TREATMENT OF REFRACTORY ANÆMIAS.

IT was not long after the introduction of liver treatment for pernicious anæmia had produced such striking successes that refractory cases began to be reported. The influence of infection was studied in this regard, and also a group of cases, the so-called achrestic anæmias, were described in which the characteristic achlorhydria of pernicious anæmia was lacking. This latter group showed resistance to ordinary treatment. Growing experience with the cellular pictures of bone marrow introduced additional factors, and the study of blood formation at its source has been more illuminating than the study of the circulating blood alone. Deeper knowledge of the severe granulopenias, a much more important group since sulphonamides have been introduced, has further stressed the significance of the factors concerning cellular maturation in the marrow. It seemed likely that such factors existed not only for white cell, but also for red cell production. This question with the still more vital question of appropriate treatment has been further explored by L. T. Davis and L. S. P. Davidson in a recent research into the value of proteolysed liver in the treatment of refractory anæmias.[1] This work from the Department of Medicine of the University of Edinburgh adds to other recent work from the same laboratories which has shown the value of proteolysed liver in cases of pernicious anæmia and has supported the classification of refractory anæmias on the basis of the morphology of the sternal marrow. The papain digest of whole liver which has been used in these experiments has been found suitable for oral administration, and notable successes have now been gained by its use in cases which refused to respond to ordinary treatment.

Davis and Davidson describe five representative cases in detail, the patients ranging from childhood to later life and including a woman in the puerperium. They also quote three cases of severe macrocytic anæmia of obscure cause in which partial blood regeneration was achieved by the use of the proteolysed liver. It is interesting that complete histamine-fast achlorhydria was not found in all cases, as some of the patients secreted free hydrochloric acid in the stomach. In each case parenteral liver extracts had failed to produce a response, but the liver digest was successful. Whether such success will be maintained cannot yet be stated. The individual cases reported are worth study, as an analysis of the probable ætiological factors concerned is made by the authors. The varied ætiology of the cases quoted, and even the obscure causation of those cases in which a partial remission only was obtained stimulate our interest. Are there any discoverable common factors in these refractory anæmias? The so-called "achrestic" group, into which category some of these cases fall, is not the only resistant group, and a wider net must be cast. In their discussion Davis and Davidson restate the belief that macrocytic anæmia associated with megaloblastic changes in the marrow is due to a deficiency of the anti-anæmic principle of Castle. This in its turn

[1] *The Quarterly Journal of Medicine*, April-July, 1944.

may be due to defective production of the intrinsic factor, or to the lack of extrinsic factor, or to defective absorption or storage of the anti-anæmic principle. But even if the validity of this hypothesis is granted, cases still occur that cannot be fitted into this frame. Davis and Davidson believe that the proteolysed liver extract has proved superior to parenterally administered liver extract, and naturally ask why. Surely it cannot be merely because a larger amount of extract is required, because the potency and concentration of ordinary liver extract are well known. Is it then because the proteolysed extract contains some extra essential factor in adequate amounts? If we recall the early days of liver treatment we may admit that the refractory cases did not seem to arise while we were using raw whole liver. This postulated factor is, in the opinion of these authors, concerned with maturation of the precursors of blood cells in the marrow. It may be that the position is similar to that seen in cases of arrest of granulocyte production. Here the marrow is filled with cells, waiting, but, as it were, lacking the last finishing touch that will launch them competent and mature into the blood stream. Davis and Davidson are pursuing research along these lines, and without prejudice point out that their extract contains 1% methionine, an amino acid whose importance has been recently pointed out in liver disease. Vitamins possibly enter the picture, too, but it is recognized that experience with tropical anæmias in this regard does not necessarily apply to other varieties.

This work is valuable and promises to open another chapter in the treatment of macrocytic anæmias. Davis and Davidson briefly refer to the macrocytic anæmias of pregnancy, which have been thought to be due to some combination of the factors mentioned above *plus* the demands of the fœtus. The whole subject of the "pernicious" anæmias of pregnancy is well covered in the same journal by Sheila T. E. Callender.[1] She points out that in non-tropical areas the macrocytic hyperchromic anæmia is unusual during pregnancy, though the literature now contains abundant material. Callender's criteria for diagnosis of this condition are the presence of true megaloblasts in the blood stream and of a megaloblastic change in the bone marrow. Poor dietetic conditions often form the background for this anæmia, but not invariably. Usually symptoms arise during the third trimester, and frequently include severe gastro-intestinal complaints. A variable blood picture may make the diagnosis difficult, and if the above criteria are accepted it will be seen that the other features usually considered characteristic of pernicious anæmia may be inconspicuous. To look for true megaloblasts in the blood is in the opinion of this author all-important, as it leads to the correct diagnosis. Excellent illustrations are printed in this article of the cells found in the peripheral blood and bone marrow. The whole article should be read by those interested. The author stresses the importance of giving adequate doses of liver extract, of continuing these till a good response has been obtained, and of attempting to attain a normal blood count. The malign effect of infections, particularly of the urinary tract, is also pointed out. If necessary, transfusions should be used. Possibly the proteolysed extract of liver may find a definite place in these potentially serious anæmias also.

[1] *Ibidem.*

EXTRARENAL URÆMIA.

URÆMIA is not a very good term, but in spite of criticisms, like many other inexact names it keeps its place. In the case of renal failure occurring as the result of inexorable renal disease it is perhaps inappropriate, but when such failure is threatened because of biochemical disturbances arising outside the kidneys it is a useful term, though extrarenal azotæmia is perhaps preferable. In any case it is important to remember that a patient may die from kidney failure through extrarenal causes, and even more important to realize that timely recognition of the processes at work may reverse the sinister train and restore him little harmed to his previous state. Now that peptic ulcer, or perhaps what may be called the peptic ulcer syndrome, appears to be occurring more frequently, and exuberant advertisements of antacid remedies abound in all newspapers and magazines, we may look to see more threats to the renal stability particularly of middle-aged patients. There is nothing new in this, but as Edward J. O'Donovan and Francis D. Murphy remark in reporting two cases, the importance of this complication superimposed on an already serious disorder cannot be gainsaid.[1] The two patients were over fifty years of age; both had suffered from peptic ulcer, one had been operated on for a perforation and had been noted to pass albumin and white cells in the urine. This latter patient was dehydrated, which was not surprising, as he had vomited daily for some months. He was irrational; muscular twitching was noted and also carpo-pedal spasm. Blood analyses proved that he was in a condition of alkalosis and azotæmia. It was rightly suspected that he had pyloric stenosis following cicatrization of gastric ulcer, and on a *régime* of continuous per-oral suction and free administration of fluids he made a good recovery and was eventually operated on with success. The other patient died and was found to have an almost imperforate pylorus. It is quite in keeping with the expected cycle of events that in each case the blood pressure was not raised above normal. In the fatal case the amount of kidney damage found at autopsy was insufficient of itself to account for death. This, too, is a common finding. The mechanism at work is quite simple. Dehydration is the chief original deciding factor. It may be due to vomiting, profuse diarrhœa, insufficient intake of water or some other pathological state such as diabetic acidosis. Loss of water from the tissues at first affects the extracellular body fluid, and sodium loss ensues, particularly if vomiting has been copious. Blood concentration occurs, the circulation slows and the colloidal osmotic pressure rises. The effective filtration pressure acting at the glomeruli thus falls, and the altered conditions of circulation may also react unfavourably on the blood supply of the heart itself.

O'Donovan and Murphy discuss the details of the biochemical changes, including the modern views on the hypochloræmia found in cases of high intestinal obstruction. These need not be pursued here. The value of drainage of the stomach and upper part of the alimentary tract by tubes such as the Miller-Abbott is well known, and indeed the treatment of dehydration and threatened extrarenal azotæmia by adequate drainage and the administration of free fluids and sufficient salt is firmly established in medical and surgical practice. But is it worth while to point out that a patient with a possibly sclerosing prepyloric or pyloric ulcer is in danger, particularly if he is troubled by vomiting and endeavours to correct this with unguarded doses of alkalis. Such a patient may have previously suffered a perforation of the ulcer, and after recovering from an emergency operation be naturally unwilling to face further operation. Apart from the occurrence of pyloric obstruction are the cases in which the middle-aged patient with lowered renal reserve takes indiscreet and often increasing doses of alkali. Actually alkalosis does occur sometimes in such cases, and its stealthy approach may accelerate rapidly after a time, creating a situation of some peril before it is realized what is happening. The ulcer patient is now frequently given what is perfectly sound advice, that when faced with a neural and somatic crisis he should augment his treatment so as to tide him over a possible emergency. But it should be remembered that such treatment must be physiological and properly controlled, and if vomiting occurs the possible causes should be clearly understood by the medical attendant and possible untoward results foreseen, lest, as these authors point out, to the malady is added a dangerous complication.

[1] *Annals of Internal Medicine*, October, 1944.

Abstracts from Medical Literature.

THERAPEUTICS.

Hypertension.

K. S. CRIMSON, C. E. KERNODLE AND H. C. HILL (*The Journal of the American Medical Association*, September 23, 1944) discuss treatment of hypertension. Restriction of activity, rest, induction of sleep and sedatives are used. Splanchnicectomy or subtotal to total paravertebral sympathectomy and cœliac ganglionectomy have been employed also, and the beneficial effect of rest and of "Sodium Amytal" has been advanced as evidence of neurogenic hypertension. This is regarded as a form of vasomotor instability in which elevations of blood pressure are due to emotional stimuli, and the response to rest and "Sodium Amytal" has been regarded as a favourable indication for surgery. The effect of rest and sleep on normal dogs was studied and blood pressure was found to be lower during rest and sleep than during activity. Neurogenic hypertension was later induced in four dogs by excision of the carotid sinuses and division of the vago-depressor sympathetic trunk of one side and by division of the depressor nerve of the opposite side. In these animals the effect of rest and sleep was much more variable; generally a somewhat lower blood pressure was induced than during activity. "Sodium Amytal" in divided doses up to 0·2 gramme per dog in three or four hours induced sleep. The effects were variable in both normal dogs and those with hypertension. "Pentothal Sodium" anæsthesia caused a rise in blood pressure in two normal dogs and a fall in three; in the hypertensive dogs the blood pressure fell in five cases out of six. Ether anæsthesia also lowered the pressure of hypertensive dogs, but the fall was not pronounced unless anæsthesia was deep. In general it seems that a neurogenic hypertension in dogs will persist, though it is at times somewhat reduced by sedation, anæsthesia and natural sleep. Rest and "Sodium Amytal" sedation were employed before sympathectomy as a guide to operation (paravertebral sympathectomy) in twenty cases. A repetition of the test three to nine months after operation indicated that neither the response to rest nor to "Sodium Amytal" was a sound guide as to which patients should benefit by operation.

Thyreotoxicosis.

W. S. REVENO (*The Journal of the American Medical Association*, September 16, 1944) has recorded the results of treatment with thiouracil of nine ambulatory patients suffering from thyreotoxicosis. All had toxic adenomata, and five had been taking Lugol's solution just before treatment. The dose of thiouracil was 0·6 or 0·8 gramme daily, continued for several months as a rule, with short intermissions of ten to twenty-one days at rare intervals on account of epigastric pain. In some cases nausea, chills and fever caused temporary suspension of the drug; and in one case rapid increase in size of the gland necessitated operation. In some cases the dose of the drug was reduced from 0·6 or 0·8 gramme to 0·4 gramme daily and continued at that level. One patient had a recurrence of symptoms of gastric ulcer during treatment with thiouracil. In general six out of nine patients showed improvement, indicated by gain of weight, fewer symptoms and a fall in metabolic rate.

Orbital Cellulitis.

H. O. SLOANE (*The Journal of the American Medical Association*, September 16, 1944) describes a case of orbital cellulitis treated successfully with penicillin. The patient was a boy, aged twelve years. He had redness, swelling and œdema of the lids with considerable proptosis of the left eyelid, and a dilated pupil. The boy was seriously ill with enlarged cervical glands, a temperature of 102° F., a rapid pulse and respiration. X-ray examination showed a large amount of fluid in the left antrum and the left ethmoid was cloudy. Sulphadiazine was given in large doses for three days; then, as there was no apparent response, penicillin was given intravenously, 100,000 units in twenty-four hours followed by 50,000 units every twenty-four hours for nine days. Improvement was noted from the first day and recovery was complete within three weeks. Local treatment consisted of continuous hot magnesium sulphate applications and instillation of 1% atropine sulphate thrice daily.

Gonorrhœa.

T. H. STERNBERG AND T. B. TURNER (*The Journal of the American Medical Association*, September 16, 1944) discuss the treatment of sulphonamide-resistant gonorrhœa with penicillin sodium. A total of 1,686 patients refractory to at least two courses of sulphonamide were treated with 10,000 to 20,000 units of penicillin sodium every three hours until from 40,000 to 160,000 Oxford units had been given. Excellent results were obtained, the percentage of cures being 98 with 160,000 units and 86 with 50,000 units. Of 126 patients whose gonorrhœa was not cured with one course of penicillin, 85 were treated with another 100,000 units; 78 were cured. Complications responded well, the more serious requiring prolonged treatment with higher dosage.

R. B. GREENBLATT AND A. R. STREET (*ibidem*) record the results of treatment with penicillin of 109 females whose gonorrhœa was resistant to chemotherapy. Following 40,000 to 150,000 units attempts to grow cultures within twelve to twenty-four hours were usually unsuccessful. Only five patients did not respond well to treatment, and in these cases cultures were obtained after the fifth day; the therapy was regarded as having failed, and the penicillin was repeated. Vaginitis, salpingitis and pelvic peritonitis frequently abated within twenty-four to forty-eight hours after penicillin. On the other hand purulent urethral and cervical secretions continued in many cases, despite absence of bacteriological proof of gonococcal infection. In the treatment of the five patients who did not respond favourably, a second course of penicillin gave good results.

Phenoxetol.

H. BERRY (*The Lancet*, August 5, 1944) writes on the antibacterial values of ethyleneglycolmonophenyl ether or β-phenoxyethyl alcohol, $C_6H_5OC_2H_4OH$, and suggests that the name phenoxetol should be used for it. This substance is a colourless, odourless, somewhat viscous liquid, which may develop a faint rose-like odour, due probably to the development of traces of aldehyde by oxidation. It is heavier than water and soluble in it to the extent of about 2·5% v/v at 20° C. Since the rate of solution is somewhat slow at 20° C., it is preferable to dissolve the substance in hot water and then to cool the mixture and adjust to volume. Phenoxetol is quite stable in aqueous solution and the pH of such a solution is that of the water used. It is miscible in all proportions with alcohol, acetone, glycerin and castor oil, but not with such fixed oils as olive or arachis in which it dissolves to about 2%. It can be made soluble by soap solutions. The author carried out tests of the bacteriostatic and bactericidal values of phenoxetol and found that *Pseudomonas pyocyanea* was particularly sensitive to it. He concluded that the compound might be used against pyocyanea infection in wounds, perhaps in conjunction with other antiseptics such as penicillin, the acridine compounds, the quarternary ammonium compounds and the sulphonamides, which have low bacteriostatic values against *Pseudomonas pyocyanea*. Phenoxetol was found to be compatible with these other antiseptics.

J. GOUGH, H. BERRY AND B. M. STILL (*ibidem*) have carried out an investigation in the use of phenoxetol in the treatment of pyocyanea infections. They point out that *Pseudomonas pyocyanea* is becoming an increasing nuisance to plastic surgeons and others preparing wounds and burns for skin grafting. A daily application of a 2·2% solution in water eliminated the infection in some cases and reduced it in others. Clinical improvement was manifested in the wounds despite the persistence of other organisms. The treatment is valuable in the healing of surface wounds associated with skin loss and in their preparation for grafting.

NEUROLOGY AND PSYCHIATRY.

A Psychiatric Study of Sex Offenders.

THE material for a study by Benjamin Apfelberg, Carl Sugar and Arnold Z. Pfeffer (*The American Journal of Psychiatry*, May, 1944) was obtained from the clinical records of 250 non-psychotic male sex offenders examined at Bellevue Hospital. Pædophilia and exhibitionism comprised two-thirds of these cases, the other third being made up of cases of rape, incest, sex relations associated with force and homosexuality. Statistics regarding race, age, education, religion, marital status and previous offences are presented. The authors consider that the psychopathology of the sexual delinquent in the main consists of faulty psychosexual development resulting in an inability to attain sexually mature attitudes to later life. Psychometric examination revealed a number with dull normal mentality among the exhibitionists, especially in those cases in which neurotic traits were not present, and among the cases of pædophilia, particularly among the shy

schizoid types who displayed a preference for young children. It is strongly contended that the psychiatric examination of all sex offenders should be made mandatory through legislative enactment.

Psychic Deafness in Children.

EMIL FROESCHELS (*Archives of Neurology and Psychiatry*, June, 1944) uses the term "psychic deafness" in reference to children whose apparent deafness can be cured without otological or other treatment for an organic disorder. He reports three such cases in detail, maintaining that while some cases might be identified with hysterical deafness, in at least one there appeared a degenerative disease process of the acoustic nerve. In the author's experience, some children appear deaf simply through inactivity of the Heschl centre; and he quotes the case of a girl of ten, the child of congenitally deaf parents, who was thought to be deaf and was taught the sign language, when it was later discovered that she could hear, and after appropriate acoustic education became normal. The author describes the method of testing the hearing acuity. He thinks that the tickling reflex has significance for the diagnosis of deafness in children. He considers the probable basic trouble in such cases to be a slight defect in Heschl's convolution which, creating an aversion to auditory stimuli, causes a vicious circle in which the picture of deafness is accentuated.

Spinal Cord Level Syndrome following Treatment of Tabetic Crisis.

AFTER reviewing the scant literature on the intrathecal administration of magnesium sulphate for tabetic crisis, Samuel A. Guttman and Abner Wolf (*Archives of Neurology and Psychiatry*, August, 1944) report the case of a man, aged fifty-two years, a tabetic, who received an intrathecal injection of two cubic centimetres of 25% solution of magnesium sulphate. On the first occasion there was no untoward response and the crisis subsided. On the second occasion, following a similar injection, the patient suffered a peripheral vascular collapse with a rise of temperature which persisted for a day. Within several hours following the injection he experienced severe shooting pains over the lower extremities which he could not move; and he was unable to void urine. A flaccid paralysis of the lower extremities persisted through seven malarial paroxysms; and the patient finally died three months after the second injection of magnesium sulphate. Post-mortem examination showed no evidence of mechanical injury to the spinal cord or *cordæ equinæ*; but there were degenerative changes in the spinal cord and nerve roots. No conclusive evidence was found as to causation.

Post-Traumatic and Histamine Headache.

MANY theories have been advanced to account for post-traumatic headache, and Arnold P. Friedman and Charles Brenner (*Archives of Neurology and Psychiatry*, August, 1944), in their investigations upon this subject, have studied the effect of injections of histamine. Twenty-two patients who previously had suffered from post-traumatic headache were given intravenous injections of histamine (0·275 milligramme of histamine diphosphate). As the result of this thirteen patients developed headache identical with post-traumatic headache; three had headaches which were strikingly similar; and two failed to develop any headache. There was a prompt decrease in the systolic blood pressure, followed by a rise when the headache appeared. Some patients obtained relief by sitting upright. The authors suggest that histamine induces a physiological mechanism involved in the production of some post-traumatic headaches.

Multiple Transfusions for Schizophrenia.

ARNOLD Z. PFEFFER AND MICHAEL J. PRESCOR (*Archives of Neurology and Psychiatry*, August, 1944) sought to determine the efficacy of treating schizophrenic patients by replacing their blood with that of normal donors. The donors were of the same blood groups as the recipients with one exception. The experiments were controlled and psychiatric examinations were made in accordance with a special rating code covering a number of specific clinical factors. Of the six patients treated by this method, only one showed significant improvement in his mental condition; and this, the authors state, may have resulted from a spontaneous remission or from the added attention of the medical and nursing staff during the treatment. The authors conclude that experimental replacement transfusions have no therapeutic value in schizophrenia.

Causation of Mongolism.

A DISCUSSION on the causation of mongolism based upon a review of over a hundred cases is contributed by M. Engler (*Journal of Neurology, Neurosurgery and Psychiatry*, January and April, 1944), who believes that mongolism is due to the unhealthy condition of the mucous membrane of the uterus at the time of the implantation of the impregnated ovum. The author arrives at his conclusion after having discussed such theories as the ill health of the mother, the theory of exhaustion, the theory of increased amniotic pressure and the theory of nidation. For the first few weeks after impregnation the ovum depends for its nourishment upon the mucous membrane of the uterus through osmotic pressure and osmotic activity. One of the main causes of a morbid condition of the uterine mucous membrane is miscarriage, whether the result of curettage or of abortifacients. Detailed family histories are given to show instances in which a mongol was born directly after a miscarriage.

Schizophrenia in Identical Twins.

SILVANO ARIETI (*The Psychiatric Quarterly*, October, 1944) gives a full report of female schizophrenic monozygotic twins, confined to different mental hospitals within seven months of each other. The symptomatology presented was fundamentally similar. One girl remained psychotic in spite of treatment. The other achieved a spontaneous remission and was discharged from hospital. The recovery occurred in the patient who was more athletic and less asthenic in body build, whose prepsychotic personality was more extroverted and who had always shown the better ability to cope with difficult situations in life. The author compares the hypochondriacal symptoms presented by the one with the somatic delusions of the other, and advances the hypothesis that anti-schizophrenic defence mechanisms manifest themselves at a psychological level by atypical symptoms.

Physical Examination in Neurosis.

H. G. MCGREGOR (*The Journal of Neurology, Neurosurgery and Psychiatry*, January and April, 1944) reports on the physical findings among 2,288 consecutive patients admitted to a military hospital for neurosis. In this series it was found that 3·4% had an organic disease; that the mean blood pressure of the remainder was higher than the accepted normal; and that many patients subjected to exercise tolerance tests yielded anomalous results which were considered due to nervous factors.

Malarial Treatment for General Paresis in the Presence of Pulmonary Tuberculosis.

PULMONARY TUBERCULOSIS has long been regarded as one of the absolute contraindications to pyrexial therapy, but Hyman Pleasure (*The Psychiatric Quarterly*, October, 1944) has shown that this is not so. Of his eleven patients with neurosyphilis and tuberculosis treated by malarial hyperpyrexia, only one showed a slight spread of the pulmonary disease. The author mentions that even when the tuberculous process is active, pyrotherapy does not cause a rapid hæmatogenous or bronchogenic spread. Exhaustion from over-frequent quotidian chills may do harm, but the attenuated malarial strains now utilized in pyrotherapy can be easily controlled by quinine or "Atebrin"; and the pulmonary lesion may be kept under continual observation by radiography. The less frequent chills of the quartan type the author considers do no harm at all. Artificial or non-malarial pyrotherapy can be so spaced as to be quite innocuous to the tuberculous patient.

Clinical Findings in Electro-Shock Treatment.

LEONARD GOLD AND CARMELO J. CHIARELLO (*The Journal of Nervous and Mental Disease*, December, 1944) undertook in the electric shock treatment of 120 patients to determine the prognostic value of certain clinical features and to arrive at a more scientific selection of cases for such treatment. They regard the following features as indicative of a good prognosis: a duration of illness of not more than one year, a background of familial stability, a sudden onset with muteness, perplexity and confusion, an exogenous precipitating factor, a good school and work record, friendliness prior to the psychosis and a satisfactory marital and sexual relationship. A poor prognosis is portended in the presence of the following: a gradual onset of symptoms, gradual loss of interest, negativism, restlessness, ideas of reference, grandiose delusions and certain personality traits. The authors emphasize the necessity of complete psychiatric examination and the complementary follow-up of the patient's mental reactions.

British Medical Association News.

NOTICE.

THE General Secretary of the Federal Council of the British Medical Association in Australia has announced that the following medical practitioner has been released from full-time duty with His Majesty's Forces and will resume civil practice as from the date mentioned:

Dr. A. C. Blumer, 362, Chapel Road, Bankstown (May 29, 1945).

Medical Societies.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING of the Melbourne Pædiatric Society was held on July 12, 1944, at the Children's Hospital, Carlton, DR. H. DOUGLAS STEPHENS, the Acting President, in the chair. Part of this report appeared in the issue of February 10, 1945.

Brushfield-Wyatt Syndrome.

DR. ROBERT SOUTHBY showed a child, aged eight months, as probably suffering from the Brushfield-Wyatt syndrome. Dr. Southby said that in addition the case emphasized one of the difficulties the physician was up against when he was confronted with a baby having a convulsive seizure. At the age of five months the baby under discussion had had an epileptiform seizure of the Jacksonian type. Twitching began in the right side of the face and spread to the arm and leg. It lasted about half an hour. The following day five turns of this nature occurred. The baby lost consciousness in the attacks and remained drowsy for some time afterwards. These Jacksonian turns soon subsided after the child was admitted to hospital. On examination, a red, angiomatous lesion was found over the whole of the left side of the face and skull. Cerebro-spinal fluid obtained by lumbar puncture was clear and contained 50 milligrammes of protein per 100 cubic centimetres. X-ray examination of the skull revealed no abnormality except for asymmetry. An encephalographic examination was performed by Dr. Graeme Robertson and gave the following results. The right lateral ventricle was slightly larger than the left, and the *septum pellucidum* was situated to the right side of the mid-line. The left parietal bone was flattened and the left side of the skull was much less capacious than the right. Gas was directed over the left cerebral hemisphere, and examination revealed dilatation of the subarachnoid spaces. There was a large cistern in the *septum interpositum* (an unusual developmental abnormality), to which gas gained access from the *cisterna vena magna cerebri*. The subarachnoid cisterns in the posterior fossa were usually dilated and the aqueduct was separated from the *dorsum sellæ* by an unusually large distance (3·5 centimetres). Finally, the *cisterna pontis* was separated from the basi-occiput and basi-sphenoid by an unusual interval. There appeared to be an aperture in the basi-occiput from which a small pocket of gas protruded. The films provided evidence of developmental anomalies together with maldevelopment or atrophy of the left cerebral hemisphere.

Penicillin.

DR. ELIZABETH TURNER showed three patients with meningococcal septicæmia and one with empyema treated by penicillin. The first child was a boy, aged eighteen months. He had been irritable, feverish and pale for two days prior to his admission to hospital. On examination, he was found to have a temperature of 103·4° F. The baby was pale and semi-conscious. A generalized petechial rash was present, but no neck stiffness was found and Kernig's sign was not elicited. Lumbar puncture produced cerebro-spinal fluid containing numerous polymorphonuclear cells and meningococci; the latter proved sensitive to a dilution of one-sixteenth of a unit of penicillin per millimetre. One hour after the child's admission to hospital saline solution and glucose were administered intravenously and one gramme of sulphapyridine in tablet form was given at intervals of four hours, also by the intravenous route. Twenty hours later the clinical condition was deteriorating, the rash was becoming more widespread, vomiting was excessive and the depth of the coma was increasing, so the sulphapyridine therapy was discontinued, seven grammes having been administered over twenty-four hours. At this stage, penicillin treatment was commenced, 15,000 units being given intravenously at once and 10,000 units every two hours. The next day the temperature was 99° F., vomiting had ceased and the rash was fading. The baby was drowsy, but no longer comatose. Intravenous therapy was discontinued and penicillin was given by the intramuscular route, 10,000 units being given every three hours. The following day the clinical improvement was more pronounced, so the penicillin dosage was reduced to 10,000 units every six hours. Two days later a further reduction in dosage to 5,000 units every six hours was made possible by the satisfactory response. Ten days after the child's admission to hospital penicillin therapy was suspended after a total dosage of 355,000 units had been administered. The baby was then quite well, and the only abnormality detected in the cerebro-spinal fluid was a slight increase in the number of cells.

Dr. Turner's second patient was a baby, aged six months, who had been admitted to hospital suffering from fulminating meningococcal meningitis. The illness had begun only eight hours previously. A rash had developed and the child became drowsy, a state which soon deepened to coma. On examination he was pale and semi-conscious only. The temperature was 103° F. and a generalized petechial rash was present. No neck stiffness was present, nor could Kernig's sign be elicited. Lumbar puncture produced cerebro-spinal fluid containing 38 polymorphonuclear cells per cubic centimetre; meningococci were grown on culture. Attempted culture from the blood, however, was without result. One and three-quarter hours after the child's admission to hospital 15,000 units of penicillin were given, and a dosage of 10,000 units was given every three hours by the intravenous route along with saline and glucose solution given by the "drip" method. Two days after the child's admission to hospital improvement had set in. Penicillin therapy was then continued by intramuscular injections, 10,000 units being given every three hours. Three days later the interval between doses was lengthened to six hours. The next day administration of the drug was suspended, 485,000 units having been administered by all routes over a period of eight days. The baby was taking feedings well, sitting up and smiling.

Dr. Turner's third patient was a baby, aged five months, whose illness had begun with coryza two weeks before. Twelve hours prior to his admission to hospital he had vomited, and nine hours later a generalized rash developed. On examination, he was found to have a temperature of 102·2° F. He was an ashen-grey colour and the rash consisted of blotches and petechiæ. There was no neck stiffness and Kernig's sign could not be elicited. Three-quarters of an hour after his admission to hospital penicillin therapy was commenced, 10,000 units being given intravenously every three hours with saline solution and glucose. Blood culture contained meningococci which were sensitive to one-sixteenth of a unit of penicillin per millilitre. The cerebro-spinal fluid obtained by lumbar puncture contained 58 polymorphonuclear cells per cubic millimetre and yielded a growth of meningococci in culture. The petechiæ were fading the next day. Two days after the child's admission to hospital the intravenous therapy was discontinued after 37 ounces of saline solution had been given. The administration of penicillin was then continued intramuscularly at the rate of 10,000 units every three hours. Two days later, the dosage was halved, and an attempt at culture from the blood at this time was without result. Thirteen days after the child's admission to hospital his temperature had fallen to normal by lysis and his condition was clinically normal. The injections were continued for two more days every six hours. Dr. Turner said that this patient received a total dosage of 895,000 units of penicillin over a period of fifteen days.

Dr. Turner's fourth patient was a baby, aged seven weeks, who had deve'oped coryza with coughing four days prior to his admission to hospital and had been vomiting all his feedings. On examination, he was found to have a temperature of 100·6° F., his pulse rate was 160 per minute and the respirations numbered 60 per minute. Tubular breathing was audible at the apex of the right lung, and crepitations could be detected at the bases of both lungs. The child was at first treated as suffering from bronchopneumonia and was given 0·25 gramme of sulphathiazole every four hours and oxygen intranasally. The next day the dose of this drug was doubled. On the seventh day, after a total of nine grammes had been administered, administration of the drug was discontinued, the baby's condition having improved. Five days later the temperature was "swinging", and examination revealed a flat dull area at the base of the right lung. The chest was aspirated at this site, and ten cubic centimetres of thick pus were drawn off; the pus yielded

Staphylococcus aureus in culture. This organism proved to be sensitive to penicillin in a dilution of $\frac{1}{32}$ unit per millilitre, and was "coagulase-positive". At this stage penicillin therapy was instituted. An additional ten cubic centimetres of purulent fluid were aspirated from the right pleural cavity, and five cubic centimetres of penicillin solution (10,000 units) were substituted. A coughing spasm revealed the presence of a bronchopleural fistula, for the sputum was stained yellow with penicillin. At the same time, 10,000 units of penicillin were injected intramuscularly. The next day the child's temperature was normal and the clinical condition was satisfactory. A further four cubic centimetres of pus were aspirated and their place was taken by five cubic centimetres of penicillin solution containing 2,000 units per cubic centimetre. The next day, the improvement was striking. The chest was aspirated with a wide-bore needle and only a few drops of the penicillin solution given the previous day could be withdrawn. Three cubic centimetres of penicillin solution were injected and the intramuscular dosage was reduced to 5,000 units every three hours. Two days later dulness was still present at the base of the right lung. The temperature was normal and the baby was taking his feedings well. Aspiration of the chest yielded no pus, and 6,000 units of penicillin solution were introduced. Dr. Turner said that she felt confident of the outcome.

Myositis Ossificans Progressiva.

DR. BRUCE HALLOWS showed a female patient, aged five years, who had attended the out-patient department of the hospital at the age of eight months on account of the presence of bilateral *hallux valgus* and syndactyly of the fingers. Left torticollis and shortening of the sterno-mastoid muscle also existed at this time. The child's mother had noticed a swelling in the left side of the neck at the age of two weeks. Operation was contemplated, but was deferred. The girl was next examined three years later. She had been operated on at Bendigo in the interval, tenotomy of the left sterno-mastoid muscle having been performed. However, the torticollis had recurred, and in addition spasm of each pectoral muscle was present. Dr. Hallows said that he performed tenotomy of the left sterno-mastoid and omohyoid muscles including section of the deep cervical fascia. Both pectoral muscles were subjected to tenotomy at the same time. Subsequently, increased tension developed in the *biceps humeri* and *erector spinæ* muscles on each side. This condition, along with the compensatory scoliosis and lordosis, was treated by splinting and massage. X-ray examination soon afterwards revealed osteomata at the lower end of each femur and at the upper end of each tibia. Calcified shadows were also visualized in the region of the tendon of both pectoral muscles and in the clavicular portion of the left sterno-mastoid muscle.

Dr. Hallows said he thought the condition was of unusual interest because of its great rarity and because of the diagnostic lessons to be learnt. *Myositis ossificans progressiva* or Munchmeyer's disease was the correct diagnosis. It was a peculiar disorder of the locomotor system during the growth period of children, affecting not only the muscles, but tendons, fasciæ, ligaments and aponeuroses. The disease proceeded by virtue of a series of more or less acute exacerbations and in the intervals was relatively quiescent. It was commonly associated with congenital abnormalities, the commonest of these being malformation of the great toes. Its rarity could be imagined when it was made known that in the annual review of crippled children in London, dealing with 130,000 cases annually, the disease did not appear. The condition was met with twice as frequently in the male sex as in the female. With regard to ætiology, Dr. Hallows said that heredity appeared to play a part. Like hæmophilia, it was transmitted through females. Trauma was not the whole explanation, but certainly played a part in determining the site of the lesion. Rheumatic infection appeared to play, if any, a minor role. Pathologically, the process was one of interstitial fibrosis in the sheaths of muscles and tendons, followed subsequently by ossification. In the differential diagnosis, multiple osteomata, Pott's disease of the spine and calcinosis had to be considered. The last-mentioned affected primarily the interstitial connective tissue. In *myositis ossificans progressiva* the changes in muscle were secondary to those in fascia, whereas in calcinosis the hyperplasia of connective tissue was followed by impregnation with calcium salts. In *myositis ossificans progressiva*, primary calcification never occurred, but gradually progressive ossification took place, sometimes with the formation of cartilage or an intermediate stage. Dr. Hallows said that investigations in the case under discussion, including the performance of the Wassermann test and the estimation of the blood calcium and phosphorus levels, revealed no deviation from normal. Treatment left much to be desired. Surgical measures were not indicated. Parathyreoid therapy assisted in mobilizing and removing the calcium. Massage and exercises prevented disabling deformities.

DR. ROBERT SOUTHBY asked whether there was any evidence of hypervitaminosis with respect to vitamin *D* and also whether the blood calcium level had been estimated.

DR. J. W. GRIEVE commented on the similarity of sclerema to hypercalcinosis. He said that a patient suffering from this condition had been shown at a previous meeting, and that this patient's condition had improved.

DR. K. HALLAM instanced the association of *myositis ossificans progressiva* with other causes of upset in the calcium metabolism. He pointed out that the epiphysis of the head of the metatarsal had replaced the proximal phalanx. Early fusion of the epiphysis with the diaphysis was a feature of diaphyseal aclasis. This condition must always be considered in the differential diagnosis of *myositis ossificans progressiva*.

Dr. Hallows, in reply, said that there was no evidence at present to associate the disease with hypervitaminosis. In reply to Dr. Grieve, Dr. Hallows said that hypercalcinosis affected the interstitial connective tissue, as in calcification, but in *myositis ossificans progressiva*, calcification did not occur; the essential change was progressive but slow ossification sometimes with the formation of cartilage as an intermediate stage.

DR. H. D. STEPHENS and DR. R. SOUTHBY both suggested that the patient should be shown at a future meeting of the society.

PUBLIC MEDICAL OFFICERS' ASSOCIATION OF NEW SOUTH WALES.

THE nineteenth annual general meeting of the Public Medical Officers' Association of New South Wales was held at B.M.A. House, 135, Macquarie Street, Sydney, on January 30, 1945. Dr. J. Grahame Drew occupied the chair and 28 members were present; ten members filled in forms of proxy, of which eight were accepted as valid.

Financial Statement.

The Honorary Treasurer, Dr. C. E. Percy, presented the annual financial statement, which was adopted without discussion. It showed receipts during the year of £32 6s. 9d. and expenditure of £3 16s. 11d. The accumulated funds at the end of the year totalled £643 6s. 4d., of which £550 was invested in war loans and £93 6s. 4d. was at credit in the bank.

Annual Report.

The Honorary Secretary moved the adoption of the annual report for 1944. The annual report is as follows:

During 1944 the committee has made a general review of existing conditions and has decided that the time is now opportune for a renewal of our agitation for improved salaries and conditions of service in the public medical services, and recommends, as a first measure, that the Association ask the New South Wales Public Service Board for a 20% increase in all existing salaries of medical officers employed by the New South Wales Government.

2. The committee met seven times during the year 1944, the attendances of group representatives being as follow: Dr. J. Grahame Drew (President), 7; Dr. C. E. Percy, 7; Dr. J. McManamey, 3; Dr. J. C. Smith, 7; Dr. S. Evan Jones, 7; Dr. A. T. Edwards, 6; Dr. J. McF. Rossell, 6; Dr. Dorothy McClemens, 5; Dr. Mary Edelesten-Pope, 1; Dr. W. K. Flook, 4; Dr. H. H. Willis (Honorary Secretary), 7.

In June, 1944, Dr. Flook replaced Dr. Mary Edelesten-Pope as a representative of the Education Department Group.

3. There are 107 members on the roll of the Association, of whom ten, having retired from the services, are honorary members. A large membership is necessary for the Association to place a convincing case before the Public Service Board, and it is regrettable that the smallness of the subscription militates against us in this respect. It is hoped that a system of paying £1 as a subscription for four years in advance will make collection less difficult.

4. Our Association joined other service organizations in an agitation to persuade the New South Wales Parliament to restore the State Superannuation Fund to its original sound financial basis. The effort was partially successful, and the Government's compromise is regarded as reasonably satisfactory in the circumstances.

5. Relations with the New South Wales Branch of the British Medical Association remain cordial, and some assistance has been given to our efforts to secure improved conditions for our members, that body having written to the Public Service Board drawing attention to the unsatisfactory range of salaries of medical officers of the public service.

6. In September, an invitation was accepted to send a delegate to a convention arranged by the Council of that body to discuss matters arising out of the Federal Government's proposals for a National Medical Service. Dr. Willis was sent as our representative.

7. In reply to an invitation to join a group of private practitioners in a movement for the reform of the Council of the New South Wales Branch, British Medical Association, it was decided that the individual members take such action as they may think fit. The committee thus endorsed the views of former years that the long overdue reform of the constitution of the British Medical Association in Australia is the duty of the governing bodies of that Association.

8. Our Secretary, Dr. H. H. Willis, was again nominated as a candidate for election to the Council of the New South Wales Branch, British Medical Association, and was again unsuccessful.

9. Our President, Dr. Grahame Drew, with the approval of the committee, accepted cooption to the Medical Politics Committee of the New South Wales Branch, British Medical Association, in lieu of Dr. Willis.

10. No opinion was expressed on a scheme of the Victorian Branch, British Medical Association, for a "fee-for-service" national medical service.

11. In March, Dr. Evan Jones accepted our nomination as employees' representative on a Promotions Committee to deal with promotions in the Education Department's medical service.

12. The committee is of opinion that the practice of one department lending medical officers to another department is prejudicial to the advancement of the medical officers concerned, and recommends that the Association express disapproval of the practice.

13. Representations have been made to the New South Wales Government for some cheaper and more satisfactory protection against vexatious litigation by dissatisfied patients than is provided by membership of the New South Wales Medical Defence Union.

14. A request for X-ray and specialist facilities in mental hospitals has been sympathetically received, and it is expected that the Inspector-General will take action in the near future.

15. Much earnest consideration has been given to a proposal to affiliate with the New South Wales Public Service Association, and many cordial conferences between delegates have been held. The desirability of registering this Association as an industrial union under the New South Wales *Arbitration Act* has also been considered. This and alternative proposals will be placed before members at the annual general meeting in January, 1945, and their direction sought.

In seconding the motion for the adoption of the report, Dr. A. T. Edwards reported on the agitation in conjunction with the Public Service Association of New South Wales for replacement of the New South Wales State Superannuation Fund on its original sound basis, and gave reasons why the compromise made was satisfactory in the circumstances. He also reported on negotiations for affiliation with the New South Wales Public Service Association. After a long and spirited discussion by Dr. Stevens, Dr. Machin, Dr. Hilliard and Dr. Meyers, the report was adopted.

Election of Office-Bearers.

Election of officers for 1945 resulted as follows:
President: Dr. E. T. Hilliard.
Honorary Secretary: Dr. H. Hastings Willis.
Honorary Auditor: Dr. S. McGeorge.
Committee (elected by groups): Dr. C. E. Percy, Dr. J. McManamey and Dr. G. C. Smith (New South Wales Health Department); Dr. J. McF. Rossell (Works and Railways); Dr. S. Evan Jones and Dr. A. T. Edwards (Mental Hospitals); Dr. Dorothy McClemens and Dr. W. K. Flook (Education Department).

Other Business.

The retiring President, Dr. Graham Drew, moved and Dr. Stevens seconded:

> That the committee take steps to register the Association as a trade union and an industrial union under the law of New South Wales and to arrange for alteration of the rules to comply with the *Trades Union Act*.

After a lengthy and at times acrimonious discussion an amendment was carried deferring further consideration of the matter for twelve months, the voting being 17 for and 12 against the amendment.

On the motion of Dr. E. S. Meyers and Dr. H. G. Wallace the meeting by 23 votes to two directed the committee to negotiate if possible with the Public Service Board of New South Wales for increases of salaries, especially the commencing salaries of public medical officers in New South Wales.

A hearty vote of thanks to the retiring President terminated the meeting.

Post-Graduate Work.

LECTURES AT SYDNEY.

THE New South Wales Post-Graduate Committee in Medicine announces that by courtesy of the medical officer in charge of the Royal Navy Auxiliary Hospital, a programme of lectures by medical officers of the hospital has been arranged and will be held at the Stawell Hall, 145, Macquarie Street, Sydney, on Tuesday, March 6, 1945, at 4 o'clock p.m. The programme is as follows:

"Skin Diseases": Surgeon Commander Gwynne Thomas, R.N.V.R.

"Fractures": Surgeon Lieutenant Commander Vaughan Jackson, R.N.V.R.

"Pulmography": Surgeon Lieutenant Commander D. R. Maitland, R.N.V.R.

All civilian medical practitioners and all service medical officers are invited to attend the lectures. Any inquiries concerning the lectures or other activities of the Post-Graduate Committee should be made from the secretary of the committee, 131, Macquarie Street, Sydney. Telephone: B 4606.

COURSE IN PRACTICAL BIOCHEMISTRY AT SYDNEY.

THE New South Wales Post-Graduate Committee in Medicine announces that a course in practical biochemistry will be held in the Biochemistry Department of the New Medical School, the University of Sydney, from 9 a.m. to 6 p.m. on each of the following days: Wednesday, February 28, Thursday, March 1, Friday, March 2, 1945.

The course has been designed primarily to meet the needs of candidates for Part I of the forthcoming examination for the degree of Master of Surgery, and preference will be given to those applicants who are candidates for the examination.

The fee for the course is £3 3s., and applications to attend the course, accompanied by the amount of the fee, should be forwarded as soon as possible to the Secretary of the New South Wales Post-Graduate Committee in Medicine, 131, Macquarie Street, Sydney. Telephone: B 4606.

COURSES IN PATHOLOGY, PHYSIOLOGY AND ANATOMY AT MELBOURNE.

THE Melbourne Permanent Post-Graduate Committee announces that Professor MacCallum, Professor Wright and Professor Sunderland have arranged courses of lectures and demonstrations in pathology, physiology and anatomy suitable for the First Part M.D., First Part M.S. and Second Part M.S., and other higher degrees. The lectures will occupy Wednesday and Friday afternoons, commencing at 2.30 p.m. on March 14, 1945, in the Physiology School of the University of Melbourne. The courses will terminate during July.

The fees will be twenty-eight guineas for the course for M.D., Part I, and for M.S., Part I, and fourteen guineas for pathology for M.S., Part II.

Entries, accompanied by fees, should be in the hands of the Secretary, Post-Graduate Committee, College of Surgeons Building, Spring Street, Melbourne, by Wednesday, March 7, 1945.

The Royal Australasian College of Physicians.

SEVENTH ANNUAL MEETING.

THE seventh annual meeting of the Royal Australasian College of Physicians will be held at Melbourne on Friday and Saturday, May 11 and 12, 1945. Meetings of the Council and of the Australian Board of Censors of the College will take place. The programme will also include the annual general meeting, two scientific sessions and the Third Annie B. Cunning Lecture on Nutrition. This lecture will be delivered on the evening of Friday, May 11, 1945, by Colonel Sir Stanton Hicks and will be entitled "Soils, Food and Life". Full details of the programme will be published in these columns at a later date.

Correspondence.

THE VICTORIAN BRANCH COUNCIL ELECTIONS.

SIR: After due consideration and discussion with my medical officers, I would like to draw attention to a weakness in the method of conducting the recent election for members of the Council of the Victorian Branch of the British Medical Association. The memorandum calling for nominations reached service members by second-class mail channels in a relatively reasonable time to allow a nomination to be made, but the voting paper was made returnable to the Secretary in Melbourne in eight or nine days, certainly not more than ten.

At the speed with which second-class mail moves, this meant a virtual disenfranchisement for all service members except those stationed in Victoria.

As the British Medical Association with its journals is one of the few links that service members have with their colleagues at home in general, they regard it highly, and they feel that they are isolated still more by not being able to participate in the election of office-bearers.

It is suggested that next year, if we still have not the good fortune to be home again, that the above-mentioned weakness in electing representatives be rectified.

Yours, etc.,

(Sgd.) T. G. SWINBURNE,
Colonel, Commanding an Australian General Hospital.

January 18, 1945.

SIR: The only comments I would make on Colonel Swinburne's letter are that:

1. It is regretted that, in general, the facts as stated in his letter are correct, but the rules of the Branch provide a set procedure and set dates for the calling of nominations, acceptance of nominations and dispatch of ballot papers for the Council election, and it would be necessary to alter the rules for the specified procedure to be varied.
2. Under war conditions members of this Branch are widely scattered throughout the world and no practicable alteration of the rules could possibly give to those members an opportunity of voting.

Yours, etc.,

C. H. DICKSON,
Medical Secretary.

Medical Society Hall,
426, Albert Street,
East Melbourne, C.2.
February 15, 1945.

TENNIS ELBOW: A PERSONAL EXPERIENCE.

SIR: At a time when one hears and reads so much about "tennis elbow", a personal experience might interest some of your readers.

At Christmas, 1933, I went for my usual nine days' trout fishing. The fishing was good, and the fish were moving in the daytime, and especially in the rough water. Consequently I did more "wet fly" fishing than usual. How many thousand casts I made I do not know, but it must have been a good many, as I am a hard worker when they are taking.

After my holiday my supinators are generally a bit sore and stiff, but this usually soon wears off. This time, however, when I got home, the external condyle was very tender, and the whole elbow about the radio-humeral joint was painful. It got worse, especially on supination, and I was even semi-conscious of pain in my sleep. I tried heat and massage in vain. I then read a paper in this journal on "traumatic radio-humeral synovitis", which was followed by a series of papers on the painful elbow. Conceptions of its pathology seemed to vary. As a consequence, so did the treatment. I then got an orthopædic surgeon to look at it. He thought then that the trouble was in the extensor insertion, and he gave me a "Novocain" injection over the painful condyle. In ten minutes I was in heaven; in three hours I was in hell, and I had to give myself a small morphine injection to enable me to carry on. It took me several days to get back to the *status quo*. After that I let it rip, and as the fleeting months slid by the acute symptoms subsided, but supination was slightly painful, and there was a tender spot over the radio-humeral joint. I then saw the surgeon again, and he decided that it now came into the category covered by the conception of the pathology of a proliferated fringe of synovial membrane in the joint caused by trauma.

As it was now only two months to Christmas, I thought something had to be done. It did not bother me much, but I felt sure that it would crack up again when subjected to the same exertion that caused it. I therefore took Saturday and Sunday off, and under "Pentothal" a fringe of thickened synovial was removed from the radio-humeral joint. I had a lot of pain for four or five days, though it did not stop me working, and later on I massaged the area twice daily with "Iodex" compound. It gradually got less tender, and at Christmas, two months later, I fished as hard as ever, and the elbow gave not the slightest trouble, and now, two months later again, it is perfectly well. *Verbum sapienti sat est.*

Yours, etc.,

F.R.C.S.E.

Macquarie Street,
Sydney,
February, 1945.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 27, of February 8, 1945.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force: Medical Branch.

Temporary Wing Commander C. J. N. Leleu, O.B.E. (1176), is granted the acting rank of Group Captain whilst occupying a Group Captain post with effect from the 1st December, 1944.

Citizen Air Force: Medical Branch.

The following temporary Squadron Leaders are promoted to the temporary rank of Wing Commander with effect from 1st January, 1945: (Acting Wing Commander) F. F. Ellis (261200), C. J. Cummins (261205), I. H. Cuming (251214), F. S. Parle (261215), A. W. Raymond, M.C. (271218), (Acting Wing Commander) W. A. Seldon (261220), K. E. Rex (251245).

The following Flight Lieutenants are promoted to the temporary rank of Squadron Leader with effect from 1st January, 1945: W. C. Holley (261519), B. W. Monahan (261612), E. G. Strahan (251778), W. G. Gailey (262375), K. F. D. Sweetman (252344), H. E. W. Lyons (282726), A. J. M. Dobson (252289), D. McK. McNab (252720), S. D. Mecoles (253432), N. Oldfield (282296), T. W. Capell (253179), J. D. Bishop (252373), I. R. Barrie (263252), C. B. Hudson (263255), R. D. Macbeth (263254), (Acting Squadron Leader) T. F. Ahern (263339), K. J. Basedow (283342), A. R. Robinson (263475), (Acting Squadron Leader) W. A. McKay (253472), P. A. Foley (253725), F. G. Favaloro (253718), O. H. Schneider (263716)), (Acting Squadron Leader) R. G. Weaver (261460), A. H. Campbell (253730), J. M. Moyes (261802), F. J. Collett (263257), J. S. D. Sweeting (253253).

The probationary appointments of the following Flight Lieutenants are confirmed with effect from 11th December, 1944: H. R. Hawkins (1777), P. W. Read (257475), G. D.

Charters (257499), R. W. E. Manser (257479), G. R. Jones (257478), M. I. Symonds (257508), H. L. Benn (257556), G. Whyte (267598), C. F. McCann (257631), J. J. O'Hara (267716), P. A. Hamilton (257647).

The following medical practitioners are appointed to commissions on probation with the rank of Flight Lieutenant with effect from the dates indicated: Paul David Victor Moni, M.B., B.S. (277528), 23rd November, 1944, William James Betts, M.B., B.S. (287464), Lawrence Robert Trudinger, M.B., B.S. (257718), 3rd December, 1944.

The notification in respect of the transfer of Flight Lieutenant M. Bell (267408) to the Active Force appearing in *Commonwealth of Australia Gazette*, No. 252, dated 21st December, 1944, is cancelled.

The following Temporary Flight Lieutenants are granted the acting rank of Squadron Leader whilst occupying Squadron Leader posts with effect from the 1st November, 1944: F. W. Kiel (253233), P. J. Bird (255169).

The following Temporary Flight Lieutenants are granted the acting rank of Squadron Leader whilst occupying Squadron Leader posts with effect from the dates indicated: A. H. Campbell (253730), 16th November, 1944, G. A. Hodgson (263612), J. H. Smith (253338), C. W. Kingston (273945), V. W. Threlkeld (256829), 1st December, 1944.

The appointment of Temporary Flight Lieutenant L. A. Langley (257688) is terminated on medical grounds with effect from 6th January, 1945.

Reserve: Medical Branch.

Temporary Squadron Leader W. T. Coyle (261680) is transferred from the Active List with effect from 22nd December, 1944.—(Ex. Min. No. 26—Approved 29th January, 1945.)

Dr. Morris Cohen, M.B., B.S. (297484), is appointed to a commission on probation with the rank of Flight Lieutenant with effect from 13th November, 1944.—(Ex. Min. No. 29—Approved 29th January, 1945.)

Temporary Squadron Leader V. R. Meek (261662) is transferred from the Active List with effect from 23rd December, 1944.—(Ex. Min. No. 31—Approved 29th January, 1945.)

Temporary Squadron Leader F. V. Munro (261278) is transferred from the Active List with effect from 2nd January, 1945.—(Ex. Min. No. 43—Approved 29th January, 1945.)

Temporary Squadron Leader R. M. Alder (261285) is transferred from the Active List with effect from 28th December, 1944.—(Ex. Min. No. 44—Approved 29th January, 1945.)

Obituary.

JOHN WILLIAM HORAN.

WE regret to announce the death of Dr. John William Horan, which occurred on January 26, 1945, at Perth.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Kantor, Richard, M.D., 1910 (Univ. Vienna), also recommended and approved for registration in terms of section 17 (2) of the *Medical Practitioners Act*, 1938, of New South Wales, 135, Macquarie Street, Sydney.

Milson, Anthony Howard, M.B., B.S., 1944 (Univ. Sydney), 15, Wallaroy Road, Double Bay.

Books Received.

"Fractures and Fracture Treatment in Practice", by K. Colsen, M.D.; Second Edition Revised; 1944. Johannesburg: Witwatersrand University Press. 8¼" × 5¼", pp. 160, with 163 illustrations. Price: 12s. 6d. (plus 4d. postage).

"The Modern Treatment of Syphilis", by Joseph Earle Moore, M.D., with the collaboration of Jarold E. Kemp, M.D., Harry Eagle, M.D., Paul Padget, M.D., Mary Stewart Goodwin, M.D., Frank W. Reynolds, M.D.; Second Edition, 1941; third printing, 1944. London: Baillière, Tindall and Cox. 9¾" × 6¼", pp. 729. Price: 38s. 6d.

Diary for the Month.

FEB. 24.—Tasmanian Branch, B.M.A.: Annual Meeting.
FEB. 27.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 28.—Victorian Branch, B.M.A.: Council Meeting.
MAR. 1.—New South Wales Branch, B.M.A.: Special Groups Committee.
MAR. 1.—South Australian Branch, B.M.A.: Council Meeting.
MAR. 2.—Queensland Branch, B.M.A.: Branch Meeting.
MAR. 6.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
MAR. 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
MAR. 7.—Western Australian Branch, B.M.A.: Council Meeting.
MAR. 7.—Victorian Branch, B.M.A.: Branch Meeting.
MAR. 9.—Queensland Branch, B.M.A.: Council Meeting.
MAR. 12.—Federal Council, B.M.A. in Australia: Meeting in Melbourne.
MAR. 13.—New South Wales Branch, B.M.A.: Ethics Committee.
MAR. 13.—New South Wales Branch, B.M.A.: Medical Politics Committee.
MAR. 15.—South Australian Branch, B.M.A.: Council Meeting.
MAR. 19.—Victorian Branch, B.M.A.: Hospital Subcommittee.
MAR. 19.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.
MAR. 20.—Victorian Branch, B.M.A.: Organization Subcommittee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All Public Health Department appointments.

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